



[From Erastus: *Varia Opuscula Medica*. Francofurdi, 1590.]

ANNALS OF MEDICAL HISTORY

NEW SERIES, VOLUME III

JANUARY, 1931

NUMBER I

THE RISE OF MEDICINE AT SALERNO IN THE TWELFTH CENTURY*

By GEORGE W. CORNER, M.D.

ROCHESTER, N. Y.



N the fourth decade of the eleventh century, Christians and Saracens faced each other across the Mediterranean. In the capitol of the

Arab Caliphates, at Bagdad, Cairo, Cordova and Seville, there was all the splendor of Oriental courts and a civilization in which art, science and philosophy were flourishing. In these cities, medicine was an important and highly developed profession. For centuries the eastern physicians had been translating the ancient books of medicine, Hippocrates, Galen, Orisbasius and the rest, from Greek into Syriac and then into Arabic. Upon this foundation the more recent Saracens had erected a considerable structure of medical practice and literature, culminating in the great medical en-

cyclopedias of Ali Abbas, Rhazes and Avicenna. The "Canon of Avicenna" was written about the year 1020, scarcely fifty years before the rise of Salerno.

At this same time, the map of Italy was cut up like a picture-puzzle into a number of small states, relics of the empires which had formerly controlled the peninsula. At the toe of the boot Calabria and Apulia remained in the hands of the Byzantine Empire, forming an outpost of Greece. Bordering this territory on the north lay three semi-independent duchies, Benevento, Capua, Salerno. These were fragments of the Lombard kingdom, cut off from Lombardy by the expanded Papal States, chiefly inhabited by a Latin-speaking people, and ruled by ducal families descended from the old Teutonic conquerors.

Sicily was now in Saracen hands, sharing the stability and prosperity of the Moslem Empire. This island

*Lecture delivered March 5, 1930, on the William Snow Miller Foundation established by the Phi Beta Pi Medical Fraternity at the University of Wisconsin; and subsequently at the Mayo Foundation and the Universities of Minnesota and Iowa.

formed a natural meeting place for all the Mediterranean peoples; its checkered history had made it a melting pot of the races, and the three chief languages, Greek, Arabic and Latin were all freely spoken there.

The city of Salerno, on the Gulf of Paestum, and its surrounding territory had been an independent Duchy during a hundred and fifty years. We can imagine it as a small walled town, with a few churches, a market place, and a little harbor fortified against Saracen raids. Of its intellectual and medical history before 1070 we know little, except that it had a reputation all over Europe for the practical skill of its doctors. A kind of legend has grown up that in some way the spirit of classical Greek medicine had never died out in this place. To quote the late Dr. J. F. Payne: "The broad stream of Greek medicine was reduced to a narrow rill, but it was still unpolluted." This is more poetic than true. A more accurate simile would be that of a clear mountain torrent pouring on to the sterile sands of a desert. The stream dries up and diminishes until at the end there is only a trickle of muddy water, laden with extraneous debris picked up on its way from the mountains.

In the monasteries, where scholarship had been kept alive during the Dark Ages, and possibly also in the possession of the lay doctors of Salerno, there was a handful of Greek and Latin books, including the "Aphorisms" and "Prognostics" of Hippocrates, and a few fragments of Galen. They had also a number of formularies of Galenic herb-medicine, and one book on practice called the "Practica Petrocelli," which was put together in the tenth or eleventh century from degenerate Greek sources. From

the scantiness of this literature we may conclude that theoretical medicine was not developed farther at this town than elsewhere in Europe, until after the Normans came.

About the year 1030 the Normans began to filter into southern Italy. At first pilgrims, then military adventurers, they took part as mercenaries in petty wars between the Lombard dukes, began to acquire lands and castles and finally turned upon their hosts. In 1046 Robert Guiscard arrived from Normandy, took command of the Norman bands and undertook a general conquest. By 1060 he held Calabria, and began with his brother Roger the conquest of Sicily.

Returning to Italy the brothers took Apulia in 1068 and besieged Salerno in 1075. The little city held out for eight months, but finally capitulated, giving the Normans command of all the territory later known as the "Two Sicilies." Robert Guiscard was a cruel fighter, but at Salerno he proved to be a strong and useful ruler. One of his first acts was to build the cathedral of St. Matthew, which still stands. Its contemporary *ambo* or pulpit, a masterpiece of craftsmanship, illustrates how well the fierce Normans could foster art during the century of peace they brought to Salerno.

The city now became more than ever a center of trade; it had large warehouses and its ships plied between the mainland and Sicily. Thus by the currents both of war and trade the Latin and Arabic cultures were mingled in the Norman land. Under these circumstances not only men and goods, but *ideas* were bound to interchange.

About the time when Salerno was captured, there appeared in the city

a m
We
he l
arm
hav
the
Ab
hist
Ara
to
of
into
day
thin
sm
incl
cra
of
tran
of
wri
hur
bo
Ma
call
(TH
T
on
ton
sur
of c
fica
his
not
wor
tim
on
tra
Ali
ver
Co
like
Shi
in
Gra
tic
his

a man named Constantine Africanus. We know little of his origin; perhaps he had come up from Sicily with the army of Duke Robert. He seems to have lived in Salerno for a time, and then became a monk at the near-by Abbey of Montecassino. Whatever his history, Constantine was able to read Arabic, and he made it his life work to translate the great classical books of Arabic medicine and philosophy into Latin of the kind spoken in his day. The list of his writings comprises thirty-seven titles of books, large and small, which he translated. These include the "Aphorisms" of Hippocrates, two of the therapeutic works of Galen, and above all a complete translation of the large encyclopedia of medicine which Ali Abbas had written in Arabic at Bagdad about a hundred and fifty years before. This book, known in Arabic as "Al-Maleki," (The Royal Book), was called by Constantine "Pantegni," (The Whole Art).

The "Pantegni" contains chapters on anatomy, the pulse, fevers, symptoms and crises, on prognosis and on surgery. There has been a good deal of discussion as to Constantine's qualifications as a translator. Not only is his Latin very crude, but he does not always find equivalents for Arabic words and idioms. I once took the time to compare part of the chapters on anatomy with De Koning's French translation of the original Arabic of Ali Abbas and found them to agree very well. We must remember that Constantine's task was very much like that of our friend Randolph Shields and the other good men out in China who have been translating Gray's "Anatomy" and Osler's "Practice" into Chinese; he had to make up his vocabulary as he went along.

With the appearance of Constantine's translations the doctors of Salerno found themselves in possession of a whole medical library, enormously larger than anything they had known before. They did with this new information just what enthusiastic physicians always do under such circumstances: they began to teach it and to write it down. At least fifty new books on medicine appeared at Salerno during the century after Constantine.

Let us digress from our story at this point to consider briefly the manner in which these books have come down to us. A few of them remained in active use as long as five hundred years, until the Renaissance, and so were printed. Among those which reached the printing press were the books of Constantine himself. A fairly complete edition appeared at Lyons in 1515 under the title "Opera Ysaac." This is unfortunately one of the rarest of medical books; there are, so far as I know, only three copies in the United States, one in the Army Medical Library, one in the library of the Jewish Theological Seminary of New York, and one at the School of Medicine and Dentistry of the University of Rochester. A less complete edition was printed under Constantine's own name at Basel in 1536-1539. "The Surgery of Roger," the textbook of obstetrics and gynecology called "Trotula," the book "De modo medendi," the so-called "Anatomy of Copho," and others were also printed. Most of the Salernitan books, however, were superseded in a century or two, the manuscripts were shelved, and many of them no doubt discarded and lost.

In 1837 A. W. E. T. Henschel found in the Magdalener Gymnasium

in Breslau a manuscript volume which is now preserved in the Breslau Municipal Library. It is the "*Codex Salernitanus*," a volume written about the year 1170 by two doctors of Salerno. This manuscript contains a score of books and several collections of recipes and similar memoranda. At the time of Henschel's discovery there were three other scholars interested in the early history of Salerno, namely the Frenchmen Daremberg and Baudry de Balzac, and Salvatore de Renzi of Naples. The notes and transcriptions of all four were worked up by de Renzi in his "*Collectio Salernitana*," published at Naples in five volumes in 1852-1854. This is our chief source of Salernitan history. Unfortunately de Renzi's books are marred by very bad printing and editing; the transcriptions are not very accurate and de Renzi himself was an unreliable historian. He was altogether too ready to attach names and dates to the various books and even to draw up family trees of the Salernitan authors. A great deal of imaginative untruth about Salerno began with these books. In 1898 Piero Giacosa collected a volume of previously unprinted manuscripts. During the last twenty years Sudhoff has taken up the work. His pupils among the Leipzig students have one by one edited and published the Salernitan texts until now almost all the "*Codex Salernitanus*" is in print in correct transcription, and so far as I know there are not many of the other Salernitan manuscripts still left unprinted in one form or another.

A complete library of Salernitan medicine is thus a very incongruous shelf-load, with the "*Opera Ysaac*" of 1519 at one end, scarce as an auk's egg and costing its weight in silver

at least, de Renzi's sloppy but invaluable volumes in the middle, and at the other end a score of recent German M.D. dissertations.

From the Salernitan books we learn the names of about thirty individual writers; and one can in many cases guess their approximate dates, or at least the order in which they wrote. A few years ago there turned up in the archives of the Cathedral at Salerno a book containing a register of deaths in the Cathedral parish since the tenth century, and a membership list of the confraternities or men's brotherhoods of the church. In these lists the names of scores of physicians are entered, among them many of those whose names are attached to the medical texts; but the entries are only records of enrollment or of death. We have no personal histories and no portraits by which to distinguish the names: Platearius, Maurus, Archimathaeus, Copho, Roger, and the rest. Their works alone speak for them, proving the motto of Vesalius: "*Vivitur ingenio, caetera mortis erunt.*"

The earliest effects of all this new science from the Orient are very well illustrated by two little books on anatomy which were written in these first days of the new Salerno. The Salernitan doctors seem to have had a teaching exercise, a dissection of the pig, accompanied by reading of a brief lecture of ancient origin. We have no copy of this original lecture, but we have a revised version of it, the so-called "*Anatomy of Copho*," which has a curious mingling of old post-classical Latin words and the new terms introduced by Constantine. The writer of this lecture was so uncertain of his terms that he mentions the omentum, for example,

twice, once under its Latin name and once under the Arabic (*Zirbus*) without any sign that he knew these two words mean the same thing. We can imagine, if we like, a slightly confused old-timer trying to bring his lecture notes up-to-date. The other Salernitan anatomy, the "Second Salernitan Demonstration," is not only influenced by Constantine, it is actually copied from the "Pantegni," almost every word of it. The old tradition is gone for good.

We shall see that medicine and surgery, as well as anatomy, were revolutionized by the new books. From 1080 on, medicine at Salerno was a product of the mingling of south Italian tradition and Arabic scholarship. The Salernitan contribution was a direct, practical attitude and a simplicity of mind best described by the word *naïveté*; the Arabic was characterized by systematic formalism, attention to detail, and a great respect for authority. Let me read two passages from the "Second Salernitan Demonstration." The first is really copied from Constantine's "Pantegni."

There are three general operations, with three corresponding instrumental members, namely, animal, spiritual, and natural. The animal members are created for sensation and voluntary motion in all animals; also in some animals for imagination and memory. The spiritual members are for protecting the channels of breath and natural heat. The natural members are nutritive and generative. The nutritive are for the reintegration of bodily loss and waste and for the alteration of materials permuted from evil to good. The generative organs are made for the specializing of general substance and for the individualizing of special substance. In each of these systems there is one principal organ with

others protective, expurgative, and adjuvant or accessory.

Among the animal organs the brain is principal, because the animal force is principally located in it, and from it arise the other structures such as the nerves; and it is provided with others protective, expurgative and adjuvant or accessory. The protective are the pia mater, which, by enfolding the brain like a devoted mother, protects it from the harshness of the dura mater; the dura mater, which protects the brain and pia mater from the harshness of the cranium; and the cranium which protects all of these from outward harm.

This is pure Arabic scholasticism.

The second passage is the Salernitan himself speaking:

Next you will find the hair-like veins in the convexity of the liver, where the vena cava is, in this way: Near the beginning of the vena cava break off a bit of the liver substance and rub it between your fingers and the veins will appear; they are small, round, and narrow like hairs. Somebody who wanted to criticize, last year after we had done a dissection, said these were nerves—a statement which we did not refute at the time. To confute his opinion we now exhibit, before you all, these vessels, red and full of blood, with their beginnings at the origin of the vena cava.

This simple picture of the teacher of anatomy heckled by a student and returning to confute him a year later, is something very different from the academic subtlety of the Arab.

We know little about the actual methods of teaching, beyond the fact that instruction was given both in groups and by individual precept. It is reasonably certain that there was no formal medical school, in anything like the modern sense, during the twelfth century. Medicine as taught by the masters of Salerno rested upon

a very simple basis. The anatomy was, of course, purely Galenic, but so much simplified that Galen would scarcely have recognized it. The important thing is that the Salernitans taught by actual dissection. They killed a pig and pointed out all the viscera. Those present asked questions and even disagreed with the lecturer. This was very crude, but it was better than no dissection at all, and it led after two hundred years to the resumption of human dissection.

The physiology and the pathology were based on the theory of the four humors. I have never seen a better concise statement of this theory than that given in one of the Salernitan books:

There are four humors in the human body, namely, blood, phlegm, yellow bile and black bile. They are mixed in such a way and in such quantities that normally man retains his health. If, however, they are diminished, or superabundant, or thickened, or retained, or if they escape, become bitter, leave their normal regions, or enter unusual situations, various diseases occur in mankind. Sometimes it is necessary to nourish the humors, sometimes to dilute them, sometimes to compensate, and sometimes to moderate them.

The four humors have their seats in four parts of the body: blood dwells in the arteries and veins; phlegm in the brain; yellow bile in the liver; black bile in the spleen. Blood, however, resides partly in the heart and partly in the liver, and therefore it dominates in the right side where the liver is situated. The same is true of yellow bile. In the left side where the spleen is situated, black bile dominates. A part of the phlegm dominates in the bladder, another part in the chest.

Blood has a ruddy color, phlegm white; yellow bile is reddish; black bile is black and thick. Their qualities are as follows:

blood is moist and warm; phlegm cold and moist; yellow bile warm and dry; black bile cold and dry. Therefore blood is bitter by nature; phlegm salt and sweet; yellow bile sharp; black bile strong and sharp. It is obvious that these humors rule differently in different ages. In infants yellow bile and blood are more important; in adolescents, black bile; in the mature, blood; in the old, phlegm. In spring, summer, autumn, and winter, different humors dominate. In the spring blood abounds; in the summer yellow bile; in the autumn black bile; in the winter phlegm.

We may add that the different humors act in the following way: blood makes the spirit wilder; yellow bile makes it bolder; black bile, firmer; phlegm, sluggish. Therefore, infants are ruddy and cheerful; young people, romantic, quick and bold; mature people are grave; and the senile, slow and immoveable.

The humors cause variation in mood as follows: blood makes man benevolent, jolly, simple, moderate, bland, and sleepy or fat; yellow bile makes man unperturbed, just, lean, a thorough masticator, and of good digestion; black bile makes a man wrathful, grasping, envious, sad, sleepy, and critical; phlegm makes man vigilant, thoughtful, prudent.

In the sick the humors have the following effects: the blood when it is overabundant produces alienation of the mind as evidenced by laughter and singing; when there is too much yellow bile they suffer great tribulation in mind; when black bile is in excess the mood is taciturn and sad; when phlegm, they suffer with anorexia.

Phlebotomy is the beginning of health. It strengthens the mind and memory, purges the bladder, dries out the brain, warms the spinal cord, clears the hearing, restrains tears, relieves anorexia, purifies the stomach, invites digestion, induces sleep, is believed to favor longer life, and drives away disease. Phlebotomy should be done with caution, and the amount of blood withdrawn is large or

small according to the strength and age of the patient, the time of year, and the state of his bodily heat. If the blood runs black at first, bleed until it becomes red; if thick or greasy, bleed until it has the consistency of water; but the bleeding should not be allowed to run until the patient is overtaken by lassitude or weakness of the stomach.¹

Owing to the fact that disease is always associated with abnormal amounts of one or more of the humors in the body, a method of diagnosis is ready at hand. The superfluous humors cause fevers and alter the pulse, and when they are excreted they cause discoloration of the urine. Medical diagnoses are therefore made from pain, fever, pulse, and urine.

The casting of urine was a very complex matter, in which the physicians had to consider the color, odor, density, and translucency of the urine, the sex, age, diet, and complexion of the patient. Eighteen different colors are specified. I translate a paragraph: On tertian fever in summer:

When the urine is pale pink or pink, and thin in summer, it signifies tertian fever. In autumn when it is yellow from the middle up and very thin and limpid, it signifies an irregular or false quartan from over-heated bile or unnatural black bile. In autumn or winter especially, the black bile is too warm, sharp, and dry, and this causes the aforesaid color, and by the dryness the substance is modified. Following are the acute symptoms of this fever: The patients suffer from thirst more than those whose bile is normal. Sometimes the bile putrifies outside the vessels in different places and at different times. This causes a double tertian, of which the rubric is as follows:

¹ Translation of "De quatuor humoribus ex quibus constat humanum corpus," de Renzi, ii: 411-413.

Rubric of double tertian:

The urine is pale pink, or pink, thick above, thin below, becoming gray or dark toward the surface. The grayness and obscurity is caused by the over-heating of the material. The symptoms are these: pain of the head, especially in the temples, sourness of the breath, pains in the back from bile descending to the loins and kidneys, with paroxysms every day or every second day, usually coming on after dinner time. Sometimes the bile putrifies only in the location named, together with some other humor, for example, phlegm or black bile. If the bile putrifies internally and the phlegm externally, it makes a minor semi-tertian. If the bile outside and the phlegm inside, it causes a median semi-tertian, of which the following is the rubric:

The urine is pale pink, or pink, thick above, thin below, and green toward the surface. This signifies a semi-tertian fever, or pleurisy. But if it does not show green unless the hand is placed behind the bottle, it is a median semi-tertian. If distinctly green without the hand, it is obviously pleurisy. Both in double tertian or in median semi-tertian, a moderately thin urine signifies undigested material, but moderately thick urine signifies digested material. I say this to prevent any mistake.¹

The chapter on uroscopy in the "Breslau Codex" goes on like this for eighteen closely written leaves, as much as forty printed pages.

It may be interesting to know what diseases were recognized and differentiated. The great compilation "De aegritudium curatione," put together from the writings of seven physicians, lists nine general febrile diseases, and 145 local diseases. The general are as follows: quotidian fever, quartan, ter-

¹ Excerpt from "Liber de urinis" of the "Codex Salernitanus" from the text of Kadner, 1919.

tian, semi-tertian, ardent fever, fevers of long cycle (quintan, sextan, hebdominal), continuing fever, and hectic fever. From the 145 local diseases I name a few of medical interest: mania, insomnia, epilepsy, paralysis, quinsy, scrophula in the throat, asthma, peripneumonia (i.e. dry pleurisy), empyema, phthisis, indigestion, migraine, syncope, hemoptysis, gout, leprosy, inflammation of the joints.

Descriptions of disease are in general sparse and sketchy. One of the strongest arguments for the statement made earlier in this lecture, that the "broad stream of Greek medicine" had almost dried up by the time it reached Salerno, is given by the total absence of the Hippocratic method from the Salernitan semeiology. There are no vivid, clean-cut observations of the clinical picture such as those found in the "Epidemics," but mere lists of relevant and irrelevant symptoms.

The classification of fevers is purely diagrammatic. There are three kinds of fever; ephemeral, caused by disturbance of the vital spirits; hectic, due to disease of the organs; and putrid, from disease of the humors. It is very interesting that the acute exanthemata were not recognized. If Constantine had chosen to translate Rhazes instead of Ali Abbas, the Salernitans would perhaps have been able to classify their cases of smallpox and measles.

The doctrine of the four humors afforded a basis for treatment as well as for diagnosis. There are two ways in which the doctor may restore the balance of the four humors; he may cut down an excess at its origin, by changing the diet, or he may reduce it by purging and bleeding. Blood-letting was complicated by a good

many rules. The operator had to choose which of about two dozen veins to incise, then he had to decide whether to bleed by metacentasis (that is, on the same side as the disease), or by antipasis. He had also to consider the time of year, the age and state of the patient, and the quality of the blood. Magister Maurus, one of the best of the Salernitan physicians, directs that in acute fevers the patient should be bled to unconsciousness.

Treatment by purging was likewise a fairly complex matter. Each of the four humors was to be purged according to its principal seat. Magister Ferrarius wrote a small book on this subject, in which we learn that phlegm is to be drawn from the brain through the mouth or nose by gargles, from the stomach by vomits, and from the intestines by laxatives. Blood is, of course, purged by phlebotomy. Yellow bile and black bile are drained through the intestines by vegetable laxatives.

Treatment of disease by drugs, like that by purging, goes back to the same basis of the four humors, but it is complicated by classification of drugs not only into hot, cold, moist and dry, but also into attractive, laxative, constrictive and thirty-five other groups.

It would require much investigation to discover just how much of the pharmacopeia was local in origin or derived by direct tradition and how much was brought in by Constantine. Certainly the extant texts are largely dependent on the Arabic source. There are a few special features of the Salernitan pharmacy which are worth mention. It is almost entirely free of superstition and astrological lore; its spirit is Galenic; the drugs are mostly vegetable and mineral. Compound

prescriptions are fairly simple, containing only a few ingredients. They seem pleasant to use, and the directions for making them are clear and practical. Disagreeable substances such as animal feces, human saliva and sweat are not often mentioned and then almost invariably for external applications only.

I quote such a prescription:

For haemorrhoids: take some of the little worms which are found under stones, the kind that are rough on the outside with a great many feet, but roll up into a ball when you disturb them. Boil them in linseed oil and apply the oil to the place.

As the Arabic influence grew stronger the Salernitan formularies favored syrups more and more as against ordinary decoctions. Alcohol in the form of distilled liquor was not used in the Salernitan pharmacy until late in the twelfth century. Wine was, of course, used as a very frequent medium in fluid drugs.

The third method of treatment, by diet, based like the others on the humoral physiology, is expounded in a book called "*Flores diaetarum*" ascribed to John of St. Paul. It is taken from two Arabic sources, namely, the fifth book of the "*Pantegni*" (*Pars theorica*) and Isaac Judeus "*De diaetis particularibus*." The theory is as follows: all foods are either heating or cooling, moist or dry. Each of the 4 humors, as described in the passage I read to you, has also 2 of the 4 basic qualities. Choose your foods properly, therefore, and you can either reinforce or weaken the store of humors in the body. In addition, you need only take account of the fact that some foods are coarse, some middling heavy, and some light. Radishes, for example, are heating

to the third degree and dry to the second; it is obvious that they will be good for excesses of moist, cold humors, as found in the bladder and kidneys, and because they are also very coarse in quality, they are good to break a stone in the bladder. Assuming the theoretical basis, this method is not without logic; in fact, the diet list of John of St. Paul gives much the same impression of dull practicality as a table of calories. I ought to add that from the books on practice as against those on theory of diets, I have the impression that the Salernitan doctors and nurses often departed even more widely from theory than the moderns. Invalids in Salerno were actually rather comfortably fed.

As an example of how all this was applied in practice, let me quote the section on pleurisy with effusion in "*De modo medendi*," ascribed to Archimatteus.

Pleurisy sometimes occurs on the right side and sometimes on the left. When it is on the left side, the patient cannot lie on his right side, and conversely if it is on the right.

The urine is thick and rather dark and livid near the surface. This disease is caused by a flux of the brain, for the brain is dissolved by heat and constricted by cold, and thus the humors which normally drain from it collect under the ribs and generate pleurisy. Therefore if the patient has thick urine until the eleventh day, and the matter is purged through the urine, it is a good sign. If the accumulation continues with pain, and the urine begins to thin on the sixth day, it is bad. If diarrhea comes on at the third or fourth day it is good, if on the eighth or ninth it is bad. If the disease occurs in spring the patient may be bled from the median vein on the side of the disease, but according to Constan-

tine the bleeding should be done on the opposite side. Often a single bleeding cures the attack. Put the patient near the fire, avoiding smoke, in order that the heat may attract air. Rub him with dialthea (ointment of marsh-mallow), butter, and warm ointments. Forbid him the use of wine and cold water. Let him have wheat flour, and bran water or barley water containing pine nuts. Or you may do the following: cook a chicken in water until the meat separates from the bones, strain the juice and make a broth of it with wheat flour, etc. If the disease is complicated by coughing it is important to promote expectoration. The discharge may be promoted in this way: take mastix, olibanum, dragon's blood, and bolus terrae; mix them with rape-juice, rose oil, or rose water; moisten cloths with the mixture and place them on the temples. For insomnia you may prescribe somniferous drugs as mentioned in the section on acute diseases; the best is *diadragantum*, which is made from gum tragacanth, gum arabic, wheat flour, etc. If the disease culminates with empyema, you may permit a fuller diet, such as well-cooked chicken, light wine, and things of that sort. Rhubarb may be given in season; it will help the cure. In winter and autumn warm the sick-room with a large fire in order to hasten maturity of the disease. Note that if the fluid collects on the right side, the urine will be thick and deeply colored, if on the left side it will be thick and paler; if on one day the urine is pink and thick and becomes thinner on the following day, it signifies that the disease is clearing up, but if it becomes thick and white, death threatens. Sometimes the accumulation of fluid tends to become chronic; then you should take linseed and fenugreek, boil them in water, and three or four times a day apply it to hasten maturation. Let the diet be barley water with milk of almonds and strained bran water. Sometimes these patients are afflicted with obstinate constipation. This should be treated with juice of Euphorbia

and with barley boiled in water, strained and sweetened, or diluted honey may be given. Sometimes they cough and vomit. Treat this with the ashes of horehound, hyssop, pennyroyal, and catnip, administered in summer with syrup, and in winter with honey.¹

I have dealt at some length with Salernitan internal medicine, because of its bearing upon the question of sources which always arises in the study of medicine in the Middle Ages. Where did the Salernitans obtain this great body of practical and scientific information?

It is obvious that there were three possible sources. Most of what I have described is clearly of ancient origin. The diagnosis and treatment of pleurisy, for example, is very reminiscent of Hippocrates and Galen. This ancient Graeco-Roman medicine may have come down directly from Roman times in southern Italy, by tradition and in the few books which were compiled in the Dark Ages, or on the other hand it may have come from Arabic sources through Constantine's translations. In addition, there may have been a local element, methods of thought or of practice originating in southern Italy in times previous to Constantine. It is the historian's problem to discover which of these sources are important. This is no easy task; it requires a great amount of study and comparison of the available texts.

I have shown in my book on the anatomical texts, that the anatomical information of twelfth century Salerno was entirely copied from Constantine. Before Constantine the Salernitans had undoubtedly been in the habit of dissecting a pig from

¹ Translation of passage on Pleurisy from "De modo medendi," de Renzi, iv: 41-42.

time to time, and they had some sort of a simple anatomical text. When Constantine gave them the Arabic theoretical anatomy they began at once to fit it to the specimen, but the Arabic knowledge was so much superior to their own that it was adopted outright.

With regard to pathology and internal medicine, I cannot qualify as an expert, but the longer I study the subject the more nearly am I convinced that here too the Arabic medicine swamped that which survived directly in southern Italy. A large part of all the twelfth century texts are based directly upon Constantine, even to the words and sentences. Even though a statement seems to come from Hippocrates or Galen, we generally find that it actually came from one of the Graeco-Roman books which were translated from Arabic by Constantine. For example, the Hippocratic style in the passage on pleurisy which I quoted comes from the book "Regimen in Acute Diseases," which is among Constantine's translations, not directly from Hippocrates.

In short, nearly the whole of Salernitan theoretical medicine was imported from the Arabic literature. In practice it was applied with a simplicity and often with a common sense which we may credit to the Salernitans themselves; but I must confess I am inclined to think the simplicity was not always the simplicity of wisdom but of ignorance. At any rate, a century later, when new translators brought over the more intricate Arabic medicine and philosophy, Europeans at once showed themselves ready to indulge in scholasticism of a subtlety and complexity outreaching even the Arabs.

The surgery of twelfth century Salerno has a very different history. The ninth book of Constantine's "Pantegni" forms a fairly complete treatise on surgery, which its original Persian author, Ali Abbas, compiled from the sixth book of Paul of Aegina. This chapter of the "Pantegni" seems to have sufficed as a textbook of surgery for early Salerno, but toward the middle of the century some unknown writer wrote out a special surgical book of which about half is directly copied from the "Pantegni"; this is the so-called "Bamberger Surgery," found by Sudhoff in the Royal Library of Bamberg.

At the middle of the century there was a surgeon of specially high reputation in Salerno, Roger Frugardi by name. His teaching was written down, partly from his lectures and partly from private conversations, in a book put out by one Guido Aretino, a teacher of logic, in the year 1170. "The Surgery of Roger" gained at once a very great reputation. At first at Salerno, later at Bologna and other cities, doctors who used it began to write their own notes in the margins of their copies. These notes became incorporated with the text of Roger, and thus we obtained the "Surgery of Roland," the so-called "Surgery of the Four Masters," and others.

Roger's "Surgery" is very much superior, both in arrangement and contents, to that of Constantine in the ninth book of the "Pantegni," so much superior that it raises a very neat question as to where Roger found his information. Here and there one finds a paragraph literally copied from Constantine, and there are other passages no doubt directly based on the "Pantegni" although reworded.

On the other hand, there is much that is not in Constantine at all. This other material is obviously of Greek origin. I think I am correct in saying that almost everything in Roger which is not in Constantine can be found in Paul of Aegina, who wrote in Greek at Alexandria about 640 A.D. The question is: how did Roger get Greek surgery not in Constantine? Paul of Aegina had been translated into Arabic, but so far as we know there was no Latin translation of Paul of Aegina or other Graeco-Roman surgery available at Salerno either directly or through the Arabic; it is highly doubtful, on the other hand, whether Greek manuscripts on this subject were available at Salerno or Montecassino. Roger could hardly have reinvented so much of the best Greek surgery for himself. The question is quite interesting enough to be studied in detail by some one who could run down every section by comparison with Constantine, Paul of Aegina and the Arabic surgery of Albucasis.

Among the notable features of Roger Frugardi's surgery is its bold clear-headed treatment of wounds and fractures of the skull. I quote one of the best passages:

ON MANIFEST FRACTURE OF THE SKULL WITH SMALL EXTERNAL WOUND

If the fracture of the skull is large but the superficial wound small so that you cannot be completely certain of the extent of the fracture, a finger is to be inserted in the wound and a diligent investigation made, because there is no better method for recognizing a fracture of the skull than digital palpation. After you have made out the extent of the fracture in this way you should incise the small scalp wound with a razor in the form of a cross and separate the scalp

from the cranium with a raspator, and if there is not too much blood in the field of operation you should remove any fragments of bone with the small forceps. If, however, the hemorrhage is sufficient to prevent this, you may change your method until you have controlled it, after which you will be able to remove the fragments successfully. With a probe thoroughly and carefully insert a cloth between the dura mater and the cranium and proceed as we said in the previous section. Outside the cranium the wounded scalp is pressed together and the whole wound bound up with a linen cloth previously soaked in white of egg. A pad of cloth filled with feathers is laid over it and bound on according to the region of the head involved, and changed every morning or evening. If, when you dress the wound, you find the flaps swollen, it is a good sign; if, however, they are shrunken and mortified, it is a bad sign. In the course of healing when you find that the skull is entirely healed the dressing is to be reduced in size and the skin flaps are forced back to their proper situation.¹

The almost continuous warfare between the Normans and their various neighbors gave ample opportunity for practice in military surgery. Roger has a chapter on the removal of barbed arrows by means of a tube inserted in the wound so as to slip over one of the barbs and permit its extraction.

The Salernitan surgeons did not hesitate to remove bladder-stones by perineal incision. Quite in line with some modern practice, they attempted the cure of goiter by medical means, and if that failed resorted to surgery.

ON THE CURE OF GOITER BY INCISION

If the goiter is single, with the aid of a hot iron we put in one seton lengthwise and another from side to side and apply

¹ Passage from Sudhoff's text of Roger, *Stud. Gesch. Med.*, pt. 2, p. 160.

over them a cloth soaked in egg or in lard. Every day, morning and evening, the setons are drawn toward the outside until finally the flesh is cut through. When this is done if any part of the goiter remains, powder it with powder of asphodel and purified in this way the wound will heal like other wounds. If the tumor is not provided with too many arteries it may be removed by grasping it firmly in the hands and cutting the skin carefully lengthwise. The tumor is grasped with a hook and the skin is dissected away. A finger is then inserted through the wound and the goiter removed entirely with its capsule. The wound is lightly dressed with a linen cloth. If the hemorrhage is excessive we apply those remedies which have been described above for this purpose in the chapter on arrow wounds in the neck. These remedies are continued for three days. (Styptic drugs.) Afterward if any of the tumor remains, apply powder of asphodel, following it by egg, and then proceed as in other wounds. The greatest care should be taken to avulse the capsule of the goiter completely so that nothing is left, for if the slightest part remains the patient relapses. When the wound is entirely clean, it may be dusted with red powder and sutured as we have described elsewhere, and it will be cured. If, however, the goiter is very large and the patient weak or elderly, in our judgment it is best to refrain from this treatment. These large goiters usually have several lobes which makes them difficult to dissect away, and we avoid treating them with a hot iron for fear of injuring the arteries or nerves. When, however, it becomes necessary to treat these patients by surgery we tie them to a table and have them held firmly in order that we may see exactly what we are doing.¹

The only special book on obstetrics and gynecology is that which goes

¹ Passage from Sudhoff's text of Roger, *Stud. Gesch. Med.*, pt. 2, p. 198.

by the name of "Trotula." It is a compilation from Constantine and from a few fragmentary remnants of Greek obstetrics which had lingered on in Latin, chiefly the Moschion version of Soranus. "Trotula" is far inferior to the Greek authors. The only important survival is a method of protecting the perineum. As an example of its poverty of method, the only manipulative procedure recommended in difficult labor is this:

When there is difficult labor with a dead child, place the patient in a sheet held at the corners by four strong men, with her head somewhat elevated. Have them shake the sheet vigorously by pulling on opposite corners, and with God's aid she will give birth.

The rest is all drugs, fomentations and fumigations.

The mention of "Trotula" brings us to the romantic question of the "ladies of Salerne," those wise women with poetic names, Trotula, Abella, Rebecca, Constantia, of whom a kindly tradition has told us. There is an ancient story, at least as old as the twelfth century, that there was at Salerno a very wise woman who could hold her own in debate with the doctors, or could make powerful remedies, or in one way or another wield special power in medicine. For example, in one of the poetical lays of Marie de France, written about 1165, there is a tale of a prince who was ordered by his lady-love's father to perform an impossible feat of mountain-climbing. A sympathetic friend recommended him to a lady of Salerno who knew everything in the way of medicine and could make him a potion to give him strength. These stories seem to have been current not

at Salerno itself, but only in distant places.

The actual women of Salerno seem to have included among their number many who took special interest in medicine and charms. There are about a score of passages in the various Salernitan books, telling what the women of Salerno did for such-and-such a disease. Not only the local authors, but also one Bernard of Provence, a visitor and pupil of Magister Salernus, took notes on the recipes of the ladies of Salerne. These recipes are all simple folk-medicine of no more wisdom than the herb-concoctions of the pioneer women of America, for example. The only really disgusting medicine for internal use which I have seen in the Salernitan literature is one of these home-made preparations, which it is said the women gave their husbands to promote fertility.

No doubt there were many midwives. The book "Trotula" says flatly that there was an expert midwife named Trotula, and narrates a case in which she worked a cure. From these stories and bits of folklore the legend of the wise women of Salerno has grown and grown until we have a list of women who were professors and authors of books, but the Registers and Obituary of the Cathedral, which name many doctors and many women of all ranks, do not apply the title *medica* to a single woman.

I have said nothing thus far of the "Schola Salernitana," the rhyming collection of hygienic rules which more than anything else has kept the name of Salerno alive. This was not put together until the thirteenth century, after the palmy days of Salerno were over; and in the form in which we

have it, contains many later additions. There is no reason to doubt, however, that the use of rhymed aphorisms was very frequent in Salerno as a way by which physicians and laymen might easily recall the precepts of health.

The quaintness of the Salernitan writings, the queer costumes and postures of these pictures, must not leave us with an impression that the Salernitan doctors were mere lay figures of a historical romance. What little we can learn of their personality and social status makes them seem more than ever like ourselves, with problems, troubles, and feelings like our own. I will read a part of the chief record we have as to the doctor's professional approach in the twelfth century:

When you are called to a patient, may the name of God be your help, and may the angel who walked with Tobias be the companion of your mind and body. At your entrance inquire of him who greets you from what disease the sick man suffers and how his illness progresses; this is advisable in order that when you come to him you may not seem entirely uninformed as to the illness . . . Again when you reach the house and before you see him, ask if he has seen his confessor, and if he has not done this, arrange for him to do so, or have him promise to do so, because if the sick man hears talk on this subject after he has been examined and the signs of his illness studied, he will begin to despair of his safety, because he will think that you despair of it. Entering the sick-room you should have neither proud nor greedy countenance; you should repeat the greeting of those who rise as you enter, and with a gesture seat yourself when they sit down. Next you may resume the conversation with a few remarks in which you praise the neighborhood, commend the arrangements of

the house, if it seems appropriate, or compliment the liberality of the family.

Then turning to the patient you may ask how it goes with him, and have him put out his arm. At first there may be differences between your own state and that of the patient, either because he is excited at your arrival, or because he is worried about the size of your fee, so that you find the pulse rather confusing; therefore you should consider the pulse only after the patient has become steadier. Take care that he does not lie upon his side nor has his finger over-extended or flexed against his palm. Support his arm with your left hand and observe the pulse for at least 100 beats in order to feel all its variations, and thus you will be able to satisfy the expectant bystanders with words which they are glad to hear.

Next have the urine brought to you that the sick man may see you study his illnesses not only from the pulse but from the urine. When examining the urine you should observe its color, substance, quantity, and content; after which you may promise the patient that with the help of God you will cure him. As you go away, however, you should say to his servants that he is in a very bad way, because if he recovers you will receive great credit and praise, and if he dies, they will remember that you despaired of his health from the beginning. Meanwhile I urge you not to turn a lingering eye upon his wife, his daughter, or his maid-servant, for this sort of thing blinds the eye of the doctor, averts the favor of God, and makes the doctor abhorrent to the patient and less confident in himself. Be therefore careful in speech, respectable in conduct, attentively seeking Divine aid. If the people of the house invite you to a meal, as often happens, do not seem too much gratified, and do not seek the first place at the table, although it is the custom to give this to the priest or the doctor. Do not criticize the food or drink, and when in the country do not show distaste

for country food, for example millet bread, even though you can scarcely control your stomach.

While you eat you may inquire as to the condition of the patient from any one who is present, for in this way the sick man will confide in you all the more, since he sees that you do not forget him while seeking your own comfort. When you rise from the table you may mention that you have been well looked after; this too will give pleasure to the patient.¹

We know from various contemporary documents that the physicians were held in great esteem by the laity, who respected then as now the earnest devoted leaders of the profession to which they must perforce trust their lives and happiness. Trusted by patients, beloved by their students, the teachers of Salerno must have been happy men.

Bernard of Provence said of Magister Salernus that he "was called the greatest help to the sick and wounded in all our century." Some one who copied the "Anatomy of Maurus" wrote at the end: "This book, more precious than gold, was given us by Magister Maurus," and when this teacher died, on the twenty-fourth of February, 1214, they wrote in the Cathedral record "Obiit Magister Maurus, optimus physicus," (the best of physicians), an epitaph which the greatest of our own day might well envy him.

In 1194 the town was sacked by Henry VI of Hohenstaufen, who was fighting his way to the throne of the Norman kingdom. At about the same time a still more serious blow at the supremacy of Salerno was being delivered by the translators

¹ Pamphlet of anonymous Salernitan "On the Visit of a Physician to his Patient," de Renzi, ii: 74-75.

of Toledo and elsewhere, who had begun to put into Latin the works of Aristotle, Avicenna, Rhazes, and numerous other Greek and Arabic writers. The rise of Montpellier and Bologna as medical centers began, and by the thirteenth century Salerno was no longer foremost among the Hippocratic cities.

Looking back upon the great days of the twelfth century, what place in history do we grant the physicians of Salerno? Not the first place, which is reserved for the pioneers and discoverers of our art. Their task was to take over the Arabic medical culture and adopt it to the needs of

awakening Europe. While doing this, like the good physicians of all ages, they brought common sense and sympathy to the sick-room, they sought all the knowledge they could find and taught their students to go on seeking.

Modern Salerno does not preserve a single relic of the twelfth century physician. The poor fragmentary traditions of Greek and Arabic medicine, which they so bravely and hopefully gathered up, were soon outgrown, but the greater tradition of faithful service in a hard task lives on, here and everywhere, at the heart of our profession.

REFERENCES

- CAPPARONI, P. *Magistri Salernitani nondum cogniti*. Wellcome Historical Medical Museum, Research Studies in Medical History, No. 2, 1923.
- CORNER, G. W. *Anatomical texts of the earlier Middle Ages . . . with translations of four texts*. Carnegie Inst. of Washington, pub. No. 364, 1927.
- CURTIS, E. *Roger of Sicily and the Normans in Lower Italy, 1016-1154*. N. Y., Putnam, 1915.
- GARUFI, C. A. *Liber confratrum di S. Matteo di Salerno*. In: *Fonti per la storia d'Italia*. Rome, 1922.
- GIACOSA, P. *Magistri Salernitani nondum editi*. Turin, 1901.
- HARTMAN, F. *Die Literatur von Früh- und Hochsalerno*. Leipzig (dissertation), 1919.
- HASKINS, C. H. *The Normans in European History*. Boston, Houghton, 1915.
- HENSCHEL, A. E. W. T. *Die Salernitanische Handschrift*. *Janus*, 1: 40-84, 300-368, 1846.
- KADNER, A. *Ein Liber de urinis des Breslauer Codex Salernitanus*. Leipzig (dissertation), 1919.
- OSTERMUTH, H. J. "Flores diaetarum," eine Salernitanische Nahrungsmittel-diätetik aus dem XII Jahrhundert. Leipzig (dissertation), 1919.
- HARINGTON, J. *The School of Salernum*. N. Y., Hoeber, 1920.
- DE RENZI, S. *Collectio Salernitana*. Naples, 1852-57, 5 vols.
- SINGER, C. A review of the medical literature of the Dark Ages. *Proc. Roy. Soc. Med.*, 10 (Sect. Hist. Med.): 107-160, 1917.
- SPITZNER, H. R. *Die Salernitanische Gynäkologie und Geburtshilfe unter dem Namen der "Trotula"*. Leipzig (dissertation), 1921.
- SUDHOFF, K. *Zur Regimen Sanitatis Salernitanum*. *Arch. f. Gesch. d. Med.*, 7: 360; 8, 292, 352; 9: 221; 10: 91; 12: 149, 1915. *Beiträge zur Geschichte der Chirurgie im Mittelalter*. Pt. 2, *Stud. z. Gesch. d. Med.*, Nos. 11/12, Leipzig, 1918. *Die Salernitaner Handschrift in Breslau (Ein Corpus Medicinæ Salerni)*. *Arch. f. Gesch. d. Med.*, 12: 101-148, 1920.

TRANSLATION OF
A LETTER FROM A PHYSICIAN OF VALENCIA
TO HIS TWO SONS STUDYING AT TOULOUSE 1315 A.D.*

By LYNN THORNDIKE, PH.D.

NEW YORK

THERE follows a Regimen composed by Peter Fagarola, master of arts and medicine, which was sent by him from the city of Valencia to the city of Toulouse to his two sons, students residing in that city of Toulouse, in the year of the Lord one thousand, three hundred,¹ and fifteen.

Of foods, or how to eat

Beware of eating too much and too often especially during the night. Avoid eating raw onions in the evening except rarely, because they dull the intellect and senses generally.

Avoid all very lacteal foods such as milk and fresh cheese except very rarely. Beware of eating milk and fish, or milk and wine, at the same meal, for milk and fish or milk and wine produce leprosy.

Don't have fresh pork too often. Salt pork is all right.

Don't eat many nuts except rarely and following fish. I say the same of meat and fruit, for they are bad and difficult to digest.

Thy drink be twice or thrice or four times during a meal. Between meals drink little, for it would be better once in a while to drink too much at table than to drink away from table. Don't take wine without

¹ There has been an erasure at this point in the manuscript, and it looks a little as if "four hundred" had been written originally: cccc instead ccc^{mo} as at present.

* Latin original in MS Sloane 3124, fols. 74r-77r of the British Museum.

For the Latin text see *Speculum*, January, 1931.

water, and, if it is too cold, warm it in winter. For 'tis bad to grow used to strong wine without admixture of water.

Remember about the well water of Toulouse. Wherefore boil it, and the same with water of the Garonne, because such waters are bad.

Also after you have risen from table wash out your mouth [fol. 74v] with wine. This done, take one spoonful of this powdered confection.

Of meat prepared with vinegar and dried coriander similarly prepared a modicum each; of roast meat, fennel seed, flowers of white eye-bright, two ounces each; of candied coriander, candied anise, scraped licorice, each one ounce and a half; of gariofil, mast, cubebs, each three drams; of galingale and cardamomum each two drams; of white ginger six drams; of white loaf sugar three drams; made into a powder and put in a paste. And keep this in your room in a secret [or, *dry*] place, for it will comfort your digestion, head, vision, intellect and memory, and protect from rheum.

As to sleep

Sufficient and natural sleep is to sleep for a fourth part of a natural day or a trifle more or less. To do otherwise is to pervert nature. Too much is a sin, wherefore shun it, unless the case is urgent and necessary.

Avoid sleeping on your back except

rarely, for it has many disadvantages, but sleep on your side or stomach, and first on the right side, then on the left.

Don't sleep in winter with cold feet, but first warm them at the fire or by walking about or some other method. And in summer don't sleep with bed slippers on your feet, because they generate vapors which are very bad for the brain and memory.

Don't go straight to bed on a full stomach but an hour after the meal. Also, unless some urgent necessity prevents, walk about [fol. 75r] for a bit after a meal, at least around the square, so that the food may settle in the stomach and not evaporate in the mouth of the stomach, since the vapors will rise to the head and fill it with rheum and steal away and cut short memory.

Also avoid lying down in a rheumatic place, such as a basement or room underground.

Of air or one's surroundings

Choose lodgings removed from all foul smells as of ditches or latrines and the like, since in breathing we are continually drawing in air which, if it is infected, infects us more and more forcibly than tainted food and drink do.

Likewise in winter keep your room closed from all noxious wind and have straw on the pavement lest you suffer from cold.

Furthermore, if you can have coals or chopped wood in a clay receptacle of good clay, or if you have a chimney-place and fire in your room, it is well.

Also be well clad and well shod, and outdoors wear pattens to keep your feet warm.

Also don't make yourself a cap

"de salsamentis,"² as some do, for they are harmful.

And when you see other students wearing their caps, do you do likewise, and, if need be, put on one of fur.

And at night, when you study, you should wear a nightcap over the cap and about your cheeks (or throat?). [fol. 75v.]

And when you go to bed at night, have a white nightcap on your head and beneath your cheeks, and another colored one over it, for at night the head should be kept warmer than during the day.

Moreover, at the time of the great rains it is well to wear outdoors over your cap a bonnet or helmet of undressed skin, that is, a covering to keep the head from getting wet. Indeed, some persons wear a bonnet over the cap in fair weather, more especially when it is cold, so that in the presence of the great they may remove the bonnet and be excused from doffing the cap.

Also look after your stockings and don't permit your feet to become dirty.

Also wash the head, if you are accustomed to wash it, at least once a fortnight with hot lye and in a place sheltered from draughts on the eve of a feast day towards night-fall. Then dry your hair with a brisk massage; afterwards do it up; then put on a bonnet or cap.

Also comb your hair daily, if you will morning and evening before eating or at least afterwards, if you cannot do otherwise.

² Literally, of sauces or pickles or salt fish or sausages, which seems an impossible translation. Probably we have to do with a slang phrase for some current type of head-covering.

Also look out that a draught does not strike you from window or crack while you study or sleep, or indeed at any time, for it strikes men without their noticing.

Also in summer, in order not to have fleas or to have no more of them, sweep your room daily with a broom and not [merely?] sprinkle it with water,³ for they are generated from damp dust. But you may spray it occasionally [fol. 76r] with strong vinegar which comforts heart and brain.

If you will, walk daily somewhere morning and evening. And if the weather is cold, if you can run, run on empty stomach, or at least walk rapidly, that the natural heat may be revived. For a fire is soon extinguished unless the sticks are moved about or the bellows used. However, it is not advisable to run on a full stomach but to saunter slowly in order to settle the food in the stomach.

If you cannot go outside your lodgings, either because the weather does not permit or it is raining, climb the stairs rapidly three or four times, and have in your room a big heavy stick like a sword and wield it now with one hand, now with the other, as if in a scrimmage, until you are almost winded. This is splendid exercise to warm one up and expel noxious vapors through the pores and consume other superfluities. Jumping is a similar exercise. Singing, too, exercises

³ It will be noted that the straw, with which the pavement was to be strewn in winter to prevent cold, is evidently removed in summer, and that there is no condition to correspond with Erasmus' experience in the sixteenth century of rooms where the rushes on the floor had been unchanged for years and were full of fleas and filth.

the chest. And if you will do this, you will have healthy limbs, a sound intellect and memory, and you will avoid rheum. The same way with playing ball. All these were invented not for sport but for exercise. Moreover, too much labor is to be avoided as a continual practice.

Of accidents of the soul

Accidents of the soul have the greatest influence, such as anger, sadness, and love of women, fear, excessive anxiety: concerning all which I say nothing more than that you avoid all passions of the soul harmful to you and enjoy yourself happily with friends and good companions, and [fol. 76v] cultivate honesty and patience which bring the more delights to the soul, and especially if you love God with your whole heart.

For a cough

If you are troubled with a cough, beware of all cold or sour things, or salt and fried. And if cold rheum is the cause of the cough, then make a bag of camamille, salt, and calamint in equal parts mixed together, and make a pepper poultice which should be placed on top of the head or over the commissure. And a small piece of licorice should be kept in the mouth and chewed between the teeth, or a candy should be made of licorice.

Equally good is sirup of Venus' hair, sirup of hyssop, sirup of bugloss, if they are taken with water of scabiosa, water of lily, elder water, water of betony, water of rosemary in equal parts, or wash the mouth with a tepid gargle.

Equally good are dyera yeris of Solomon, diapenidion, cold diagra-

gant, preserved penidiarum, grains of pine,⁴ and the like.

And if the cough is accompanied by hot rheum, of which the signs are extreme heat, a burning sensation in the throat, saltiness, and great thirst, in this case take cold diagragant or diapienidion without spices with sirup of violets or sirup of pepper. And let this be taken in sips and not swallowed suddenly. And this is to be done without eating anything morning and evening. Immediately afterwards take a fine linen cloth and dip it in tepid oil of roses and apply it tepid to the commissure of the head, and this do twice daily.

And in cold rheum [fol. 77r] beware of all broth and meat puddings as

⁴ Guy de Chauliac, "La grande chirurgie," ed. Nicaise, Paris, 1890, p. 653, says: "*Pin*, arbre: duquel les grains sont chauds et humides, et son escorce froide et seiche, avec tres-grande adstriction."

much as is possible and of superfluous drink. And eat only roast meats not stewed in water, and eat any thick foodstuffs such as sweetbreads, split beans with their skins removed, and the like, cooked with meat.

Also in hot rheum one should eat barley-gruel, rice, oatmeal cooked with milk of almonds and sugar, pears and apples cooked with sugar, which are also good in case of cold rheum.

And one should drink yellow wine, clear and limpid.

Also equally beneficial in this case are cold diagragant, diapienidion without spices, sugar of violets, preserved penidiarum, and the like. And let this suffice so far as rheum is concerned.

Thus it ends. Thanks to God. Amen, Amen.⁵

⁵ This final paragraph was presumably added by some later copyist.



AN ANTIQUE PHYSIOLOGICAL PROBLEM

By DR. E. D. BAUMANN

OOSTERBEEK, HOLLAND

FROM Roman antiquity have come down to us three books, written by laymen and treating social and scientific problems, which interested the general reader of those times. I mean the "Symposiaka" of Plutarch, the "Noctes atticae" of Aulus Gellius and the "Saturnalia convivia" of Macrobius. Of these the studies of the philosopher from Chaeronea are by far the best. Plutarch was an industrious author, who could pleasantly converse and who had made thorough studies in the literature and philosophy of the Hellenes and the Hellenists. However he was not a man of originality nor did he make any investigation by himself. Still his work is to us of great importance, as it gives us a view into the intellectual life of his times. Much inferior to these studies are those of the writer of the "Noctes atticae," who flourished half a century later. This work, composed near Athens during the long nights of winter, was typical of the intellectual poverty of the days of Rome's decline, when man lacked all originality of thought and knew of nothing better than displaying his learning. The "Noctes atticae" too are only a compilation of extracts from Greek and Roman writers, concerning the most various questions. The "Saturnalia convivia" I think it best to pass by in silence!

In Plutarch's book is found a chapter¹ on a question of which the modern physician will think as of no question at all, i.e. whether ingested liquids passed to the stomach or to

the lungs. However the earlier Greeks apparently supposed that the fluid went the latter way. Thus Plutarch quotes a verse of the poetic warrior Alcaeus (about 600 B.C.). This poet was apparently not averse to a healthy drink,² in his opinion the best remedy against sorrow and against the consequences of an oppressive heat: "Moisten," so he says, "the lungs with wine, for Sirius sparkles in the sky!" In some districts of Greece offerings were made and religious ceremonies performed at the rise of the Dog Star to neutralize the pernicious consequences of all scorching heat in the dog-days.³ But Alcaeus was evidently of the opinion that the best preservative, when everybody was thirsting in consequence of the heat, was the cup that was merrily handed round. And of the same opinion was Eupolis (second half of fifth cent. B.C.), who was one of the most celebrated Athenian poets of the old comedy and who was even thought by his contemporaries the equal of Aristophanes. "Protagoras," says one of his persons, "has exhorted him to drink, that he may as yet wash his lungs before the rise of Sirius." Still more plainly the tragic poet Euripides expressed himself, saying: "The wine passes through the windpipes."

Finally I may quote the great philosopher Plato. He has discussed our question in the dialogue "Timaios" (70d). In this dialogue, really a monologue, Plato has treated the genesis of the world and life: there we find a story of creation, a biology, a physiology and a pathology. And we learn

that: Against the violent throbbing of the heart, such as occurred at the effervescence into rage of the passionate, militant part of the soul, dwelling in the heart, the gods had placed in the breast of man the lungs, which were bloodless and soft and had within them hollows, like the pores of a sponge. In these lungs liquid and breath were received, so that the cool lungs might refresh the heart and temper its excessive heat.

However not only laymen, but also physicians of those times were of the opinion that the liquids, or at least part of them, passed through the throat into the lungs. So ignorant of anatomy and physiology were even such eminent clinicians as Hippocrates and his contemporaries. They owed their knowledge of the human frame to the observation of wounds and to the appliance to mankind of what they had found at the preparation of animal foods and at the offering of animals to the gods.⁴ Also the embalming of the dead (with the Egyptians) and the vivisections of the naturalists may have benefitted anatomy. The dissection of human corpses was however in the eyes of the Greeks horrible,⁵ their doctrine of immortality, which interdicted the violation of the dead serving as an obstacle to the study of the anatomy of man.⁶ So the real anatomy of the human frame was only very inexactly known to them. However the Greek phantasy has filled this lack of knowledge boldly up with hazardous speculations. A curious specimen thereof is to be found in the Cnidian book "*De corde*" of the *Corpus Hippocraticum*.

The author of this book had apparently not only examined the heart of animals, as before him Alcmaeon of

Croton, but he had also seen the human heart and he had found some fluid in the pericardium. The heart, he says, has the shape of a pyramid and is dark-colored. It is surrounded by a smooth membrane, in which is to be found some fluid, resembling urine. You might say, that the heart moves in a bladder. The purpose here is that the heart may, fully protected, palpitate impetuously. The membrane contains quite as much liquid as is necessary to temper the heat of the heart. The heart sucks up the drink, which comes to the lungs, and changes it, while drinking and consuming it, into a serous liquid.

The greater part of what man drinks goes to the stomach. For the gullet resembles a funnel and takes in the drink and all the rest we consume. But a small part passes into the trachea, i.e. only so much as can flow in through the split⁷ without being perceived. Indeed the epiglottis is a cover, which shuts it off and allows only a little of the fluid to pass. This is proved by the following: When one pulverizes lazulite or red clay in water and gives a quantity hereof to a thirsty animal, to a pig by preference (for the pig is neither a reluctant eater nor is he clean!) and then cuts his throat, while he is still drinking, one will find that the throat has been colored by the liquid. (Of course the greedy pig had choked himself!) "This experiment is however not an easy one! But my statement, that the liquid makes the trachea⁸ fit for its purpose, is undoubtedly right."

However what is the reason, that, when a great quantity of water passes, much trouble and coughing are caused? Because, I say, the water comes then in the way of the breath. For the small quantity of water, which trickles through

the narrow slit [epiglottis], does not hinder the return of the air, on the contrary it smoothes the way by moistening the walls of the tube. The liquid is returned by the heart together with the air. The latter, after having performed its task, returns of course by the same way as it has entered. But part of the liquid will be driven into the pericardium, whereas the other part leaves the body with the air. So the *pneuma* is lifting the soft palate [meaning the epiglottis!] every time, when it returns. And it must return, for it is no food to the human body. For how could air and water, being raw substances, be food to man? We have to regard these things rather as a remedy against an innate evil.

(Think here of what Plato has said!)

The book "*Peri kardiës*" was, according to Wellmann, written by a Cnidian physician, who was strongly influenced by Philistion of Lokroi,⁸ and Plutarch says that in the question of the path of the liquids, the latter was of the same opinion as Plato, who had probably drawn his idea from the Sicilian physician. Dexippos, a pupil of Hippocrates, apparently also agreed with them, for he said that the liquid was separated from the solid food by the epiglottis. And whereas the latter with part of the liquid was continuing its way to the stomach, the larger half of the fluid was passing into the trachea. The epiglottis was only a hedge or sieve, by which the liquid could slowly and gradually trickle into the trachea, thus leaving room for the air. Therefore the birds could dispense with an epiglottis, for these animals did not drink like us, but put their beaks into the water and let it flow slowly into the trachea.

This too was the idea of the writer of "*De natura ossium*," a compilation from the beginning of the fourth century B.C.: Through the trachea, he

said, and through the bronchi the liquid was passed into the lungs, which were by their spongelike nature exceedingly fit to absorb much liquid¹¹ and it was their task to distribute the liquid over the whole body.¹² And finally we read in "*De morbis internis*," that dropsy was caused from imtemperate drinking and from an overflow of the lungs with liquid.¹³

Thus this doctrine had not a few supporters! However there were among the physicians as well as among the laymen also many opponents. First of all I will mention the author of "*De morbis iv*," a physician who belonged to the Cnidian school. The work may be dated about 400 B.C. Regarding our question he writes the following:

Some people pretend that the liquid goes to the lungs and from this place to the other parts of the body. However they who assert this are deceived by the fact that the lungs are hollow and provided with a tube. Indeed were this not the case, living beings would have no voice. For we give forth sounds with the aid of the lungs, because they are hollow and provided with a tube. Against those however who say that liquids should pass to the lungs, I will put forward the following: In case of the liquid passing into the lungs, the lungs being full of liquid, man would not be able to breath easily nor could he speak. For there would be nothing to let the lungs resound. The food in our body, being dry, could not be well digested. When we take purgatives, they are evacuated along the belly. All these medicaments, whether they purge upward or downwards, are very heating. The drastics cause an ulceration, whenever they touch a soft part of the body. Even the milder ones disturb the part, which they are passing. When therefore some of these purgatives came into the lungs, it would cause, I think, great damage. For even the

phlegm, flowing down from the head, causes there in a very short time an ulceration. The lungs are soft and sponge-like, but the stomach is as resistant as the skin and falls therefore not into inflammation by the purgatives. Furthermore people, having drunk dark-colored wine, have also dark-colored stools. And having eaten garlic or another strong smelling food, their urine smells thereof. Moreover when drinking a mixture of flour with wine or honey or a flourgruel or something of that sort, we should not long survive. For when only a little bit of phlegm comes into the lungs or into the trachea, heavy fits of coughing and spasmodic coughs soon follow. And supposing, that man would stand it, then the digestion, I think, would cause a violent heat and much suffering in the body. The stools too would not be normal, should the fluids pass to the lungs. Moreover how could milk nourish the small child, when the liquid went into the lungs? [For sucking children drink only!] Also for this reason the liquid must pass to the stomach, because the gullet is always open, which causes liquids to flow immediately to this part. On the trachea however there is a cover, resembling an ivy-leaf, so that were liquids inclined to flow into the lungs, it would be impossible for them to pass. The above-mentioned facts are so many arguments for my opinion. And I should not have put forward so many, were there not so many people, stoutly maintaining this error and who are not easily to be persuaded.¹⁴

The popular doctrine was also opposed by Aristotle who said:

The larynx is created for breathing. On the other hand the gullet is the way along which the food passes to the stomach. The trachea is situated in front of the gullet, so that it would be difficult for food to enter it. For when some liquid or food comes into the trachea, there follows suffocation or a violent coughing. That will indeed sur-

prise those who are under the delusion that with the animals the liquid is passing through the trachea. In many regards this opinion is however ridiculous. For there is no passage from the lungs into the stomach, similar to the gullet, which joins the mouth with the stomach. Furthermore it is clear, whence the liquid comes in case of vomiting and nausea. Also it is evident, that the liquid is not immediately collected in the bladder [which was another current error] but that it firstly passes to the stomach. For the stool in the bowels is coloured when one drinks red wine. [See "*De morbis iv*"!] The passing of the drink to the stomach is also repeatedly proved in penetrating wounds of the stomach. Meanwhile, the going into and the discussing of such foolish opinions is perhaps in itself something foolish?¹⁵

Another opponent of Plato's doctrine was the famous Alexandrian anatomist Erasistratos.¹⁶ How, he asked, could the flour, which was often mixed with the liquid, pass through the compact lung without sticking there? The similar objection that was made by the author of "*De morbis iv*"! According to his opinion liquid and food were passing together through the gullet to the stomach and were there digested. Of the indigestible remnants the dry ones left the body along the intestines, but the liquid ones were excreted by the kidneys and were collected in the bladder.¹⁷

The encyclopedist Celsus, who has drawn for his book from Alexandrian sources, was of course of the same opinion as Erasistratos. The trachea, he said, takes in the air and the gullet takes in the food. As both (i.e. the air and the food) are passed along different ways to different goals (i.e. to the lung and to the stomach) therefore there is at their meeting-place a

little tongue (*exigua lingua*) at the top of trachea, which is lifted up at the breathing and falls down at the swallowing of the food and liquid, thus closing the trachea.¹⁸

The objections arrayed by Plutarch against the arguments of his antagonists were characteristic of the manner in which such problems were dealt with in antiquity, not only by laymen but also by men of science. The lungs, he said, had within them many fissures and canals, apparently made for the passing of liquid. For the air required no ways to pass! If the trachea had been wounded, it was evidently impossible to swallow any liquid, but the liquid appeared in the wound, even when the gullet was inviolate. The existence of thirst in pulmonic diseases showed that dryness or heat of the lungs were causing thirst. Therefore animals, lacking lungs, were never thirsty. And if liquids were passed to the stomach, should then the bladder not be superfluous? For if this was the case, the liquids could leave the body together with the stool, along the rectum. The very existence of the bladder proved that there were separate ways in the body for the food and for the liquid! And when the liquid and the food were closely mixed and digested together in the bowels, must then the urine not resemble the stool in color and in smell? And moreover who had ever found a stone in the intestines? Still they should grow there as well as in the bladder, i.e. through the

thickening and solidifying of the liquid. It was surely right that the stomach needed liquid for the mollification and for the transformation of the solid food into chyle. But the stomach could get this liquid very well from the neighboring lungs, as it took also the necessary air from these organs. Plutarch said, however, in conclusion, that there was in this question much that was not yet clear, and therefore people should not be too severe on Plato!

The same may be said in apology of the philosopher of Chaeronea. For it appears that no less a man than the great physician from Pergamon, Galen, held in many respects with the idea of Plato. That all the liquid was passing to the lungs, was in his opinion rather a strong assertion! But it was very questionable whether Plato had thought so! And a small portion of the liquid was certainly going into the trachea. One could observe this by choking oneself very carefully! For in this case one could very well conquer the irritation without coughing and expectorating. Even if one made the experiment with much care, nothing was felt at all! Galen described also the experiment of the author of "*De corde*," however with this difference that according to him not only the throat but also the lungs were found colored by the liquid. I venture to doubt whether Galen made the experiment himself.¹⁹

So much then about this interesting antique problem!

REFERENCES

1. *Symposiaka*, xvii, 1; *Noctes atticae*, xvii, 11; *Saturnalia convivia*, vii, 15.
2. See Vürtheim. *Grieksche lyrische dichters*. blz. Pp. 57-59.
3. *Hesiodos. Erga kai hēmerai*.
4. HOPF, L. *Die Anfänge der Anatomie*.
5. Plinius. *Naturalis historia*. Lib. xxviii, c. 2; Celsus, *De medicina*, praefatio.
6. SPRENGEL, K. *Geschichte der Arzneykunde*. 1: 244-246.

7. Unger (*Liber Hippocraticus de corde*) reads *dia rumès*, i.e. during the rapid movement.
8. Of course not "esophagus," as Fuchs (*Hippokrates Sämmtliche Werke*, 1: 147) translates!
9. Littré. *Oeuvres d'Hippocrate*. 9: 80-82.
10. *Die Fragmente der sikelischen Aerzte*. p. 107.
11. See Littré. *De prisca medicina*. 1: 628.
12. Littré. 9: 184-186.
13. Littré. 7: 224.
14. Littré. 7: 604-610.
15. *De partibus animalium*. Lib. III, c. 3.
16. See Allbutt, C. *Greek Medicine in Rome*. p. 157.
17. Gellius. *Noctes atticae*. Lib. XVII, c. 11.
18. *De medicina*. Lib. IV, c. 1. *Opera epiglottis gemina daubus interpositae fistulis. Operit arteriam in epulando, spiritu et voce in illa meante, ne, si potus cibusve in alienum deerraverit tramitem, torqueat. Gulam per vices operit, cum spiritus tantum aut vox commeat, ne restagnatio intempestiva alvi obstrepat.* Plinius, *Nat. Hist.* lib. XI, c. bb.
19. *Opera omnia Galeni* (Kühn). 5: 718-719.



river
fath
his f
Huf
He v
Wei
auto
with
and
edge
tific
cal
rear
both
cont
scien
whic
to a
qua
thro
the
and
In
men
Uni
of th
did
Mos
diss
satu
they
whe
man
an i
stud
men
auto
wor
*Ad

CHRISTOPHER WILHELM HUFELAND*

By I. A. ABT, M.D.

CHICAGO, ILL.

CHRISTOPHER WILHELM HUFELAND was born August 12, 1762, at Langensalza, in Saxony, on the banks of the river Salza. At an early age Hufeland's father, who was a physician, removed his family to Weimar, where the elder Hufeland engaged in general practice. He was also physician to the Court at Weimar and in Christopher Wilhelm's autobiography he credits his father with a marked sense of rectitude, high and noble spirit, fundamental knowledge, inexhaustible industry and scientific attitude in his art. In this medical atmosphere young Hufeland was reared and he had the opportunity both to come in the most intimate contact with medical and biological sciences and by a strict moral training, which was customary in those days, to acquire those spiritual and moral qualities which manifested themselves throughout his life. We may pass over the childhood and youth of Hufeland and briefly sketch his university career.

In his eighteenth year he commenced his medical studies at the University of Jena. The moral tone of the student body at that University did not rank very high in those days. Most of the boys were immoral and dissolute. They drank to the point of saturation, engaged in duels until they were wounded, and studied only when occasion and examination demanded. Hufeland did not find this an inspiring atmosphere for a serious student, but he avoided entanglements of a serious nature. In his autobiography he relates that the only worthwhile thing he learned in Jena

was anatomy, and for this he was indebted to his master, Professor Loder.

The latter was the only teacher who was able to demonstrate the anatomical material and had the gift of making the subject alive and interesting. This teacher impressed on Hufeland that learning anatomy did not depend on the abundance of material, but upon the industry and interest of the student. Hufeland's father was dissatisfied with his son's work at Jena, and the son recognized later that if he had remained at that university his progress would have been unsatisfactory. This impresses us again with the importance of selecting suitable companionship and environment for a college student. Even in this day a mediocre boy or a weakling is carried away by the college spirit, the love of fun and play, and the participation in the so-called college life. It is only occasionally that a boy of eighteen can be sent to a scene of pandemonium and come out unscathed. Hufeland successfully resisted these temptations for one year at least.

The following year, in 1781, he matriculated at Göttingen. Here he met such distinguished men as Richter, Murray, Baldinger, Wrisberg, Blumenbach, Gmelin and other distinguished teachers who at that time were classed among the heroes of the scientific world. In Göttingen he gave serious attention to his studies and he tells us that he is grateful to this university because here he laid the foundation for his scientific training. He was graduated from Göttingen in

* Address delivered before the Internes' Alumni Association of Michael Reese Hospital, Chicago, March 31, 1930.

1783 and his thesis for the Doctorate was on "The Use of Electricity in the Treatment of Asphyxia."

From a fragment of his autobiography we learn that immediately after his graduation, in 1783, he repaired to Weimar.

He found, to his sorrow, that his father had become nearly blind; he was no longer able to read and his vision in general was dimmed. The old gentlemen was aged, bent and sad. He also was subject to palpitation of the heart, vertigo and melancholy. Young Hufeland immediately found it necessary to take up the strenuous practice of his father, which was not only the largest in the town but extended far into the country. The young man was only twenty-one years of age. He says, in describing this period, that where other young men of his age would have opportunity to travel and to enjoy life, he was forced into a difficult, often insurmountable toil with the cares and struggles of a domiciliary practice. But he did not regret this and expressing his high moral tone, he says that through his entire life he had the consolation that he had alleviated the sorrows and burdens of his dear father during the last days of his life, and that he was able to show his appreciation for the parental affection and help which had been bestowed upon him. He does not fail to realize that being thrown upon his own responsibility, under the wise direction of his experienced father he was receiving the best kind of instruction which a young man could have. He says that he learned more in this way than if he had visited many countries and all the hospitals in Europe.

His first medical experience was not a happy one. A blacksmith and

his wife fell ill with "putrid fever" (an obsolete term for typhoid fever or septicemia). They were refractory to his treatment and both died. At first this depressed him greatly and he thought perhaps it was a bad omen for his initiation into practice. But it did not turn out so. On the contrary he practiced ten years with much good fortune in Weimar.

In describing his practice and mode of life he relates that he was compelled to walk about the town from morning until evening. Weimar was a middle-sized town too small to ride about in and, on the other hand, too large to go about on foot without great fatigue. For the country practice the farmer or the preacher or the landowner usually sent a horse and wagon for him; sometimes only a horse, and often a bad one. He complains that the roads were bad and during the thaws of winter or spring his life was frequently in danger. And most difficult of all, in those days it was the custom to dispense medicines and he could carry only a few with him. When he returned home in the evening from the toils of the day, he was compelled to make decoctions, powders and pills, and after this had been completed he sat at his desk to record in his books the various remedies which had been prescribed. He found that dispensing drugs was a great advantage, because he learned to know the characteristics of the pharmaceutical agents and also in preparing the decoctions he often had a happy thought of adding this or that remedy to make the prescription more potent. The patients also appreciated the prescription all the more because it was prepared by the hand of the doctor himself. This increased their confidence and Hufeland thought this was important. Today the proprietary

pharmaceutical preparations are perhaps more elegant, but who knows what they contain. Hufeland and his generation at least had the satisfaction of knowing the ingredients of the compounds. In this arduous country practice the young practitioner had little time for recreation. He was so tired at night that he often wished it would be his last. He found that he was not living for himself but for others. He was passionately fond of music, though he rarely found opportunity to go to the opera or theater. He had at three different times bought tickets for the opera, but on each occasion he was unavoidably detained by professional engagements.

The elder Hufeland had enjoyed the distinction of being Court Physician for many years. This brought him in contact with the royal personages, resident in Weimar. The old doctor had no dearer wish than that his son should succeed him in this royal office. It should be recorded that the younger Hufeland's grandfather had already occupied this distinguished position. The episode which follows illustrates how human plans frequently fail, particularly when they are of paternal origin. We may guide and inspire our children, but fortunately, perhaps, we cannot live their lives. Hufeland's father used all possible influence to gain this court position for his son, and it already seemed that his efforts were effective. But several incidents occurred which diminished the confidence of the court in the younger physician. The eldest daughter of the Archduke, a child of one and one-half years of age, fell ill with a disease that Hufeland diagnosed as "acute miliary asthma." He gave the child his very best attention but the infant died on the third day. This

unfortunate circumstance did not affect favorably the prospects of the young candidate for a position at court. Shortly after this the Archduke's mother became very ill with pneumonia. When she was in desperate straits and seemed in extremis Hofrath Stark was summoned from Jena in hot haste. Hofrath Stark administered to her, on the eleventh day of her illness, a powerful emetic, in spite of which she recovered. The Royal personages could only see that Hufeland had omitted to do what Stark magically performed at the peak of the disease. It is unnecessary to add that Hufeland failed to obtain the position which his father sought for him at court. The elder grieved over this misfortune and the disappointment and sorrow may have contributed to his early death.

In writing about this incident later in life Hufeland remarked that what seemed a great calamity at that time was providential in the light of future happenings. Though he failed to be appointed court physician he achieved a higher, more distinguished career and greater field of usefulness, than if he had been successful in his first aspirations. If he had received the appointment of Court Physician and remained in Weimar he would have been a local celebrity, but he would probably never have become a great teacher and author, nor would he have contributed to science or to the world that which he ultimately was able to do. Disappointments and defeats may temporarily cause grief but need not deter ultimate success.

The ten years which he devoted to the duties of practicing physician at Weimar were of the greatest importance in the development of his talent. It is not to be forgotten that

Weimar at this time was the Athens of Germany. Here Hufeland developed a love for literature and an inspiration to write. He came in social and professional contact with Goethe, Schiller, Wieland and Herder. During his residence at Weimar he had already begun to write some chapters on "Makrobiotik" or "The Prolongation of Life." Although his day was filled with numerous tasks, he nevertheless found time in the early morning hours to devote to his literary work. Each day he wrote a portion of his "Makrobiotik."

In his autobiography he relates how he found the favor of Goethe. Every Friday the great poet entertained a company of cultured people in his home, what we would call today an academy or seminar. Each member of the group was expected to contribute some literary or scientific paper. On such an occasion Hufeland read an extract from his "Makrobiotik." The Archduke was much impressed and remarked to Goethe that Hufeland showed professorial qualities and should be given a chair at Jena. The following spring he assumed his professorial duties.

This period at Jena, which Hufeland calls the most brilliant point of his career, shows him in the height of his activity as a teacher, investigator and writer. He lectured on "Makrobiotik," also on general and special therapeutics, *Materia Medica* and Clinical Medicine, before a large body of students. He developed into a famous teacher. His lectures were characterized by quiet, fruitful and fascinating speech and, by the clearness and simplicity of his views. He always struck the practical, the essential, the nucleus of the matter, avoiding

one-sided hypotheses and groundless speculation.

In 1796 he published his "Makrobiotik," which, during his lifetime, was translated into all European languages. He also published at this time his advice to mothers "On the Raising of Children." He founded *The Journal of Practical Medicine* and the *Bibliothek für Praktische Heilkunde*.

He showed a marked interest in pharmacy. He had three chief therapeutic favorites: opium, emetics and venesection. He recognized the importance of proper dietary in the management of the patient. He emphasized the importance of baths and bathing. He early recognized the significance of Jenner's discovery and he established an Institute for Vaccination in Berlin.

In the year 1800, due to the French Revolution and to the general unrest in Germany, particularly among university students and professors, he was forced to leave Jena. Fortunately for him, at this time, he received a call to become Selle's successor at the University of Berlin as Professor of Medicine, and Director of the Charité. This new position brought him many duties as teacher and director. He was an ardent advocate of academic freedom and with all this he carried on an extensive private practice. Eventually when he was overburdened with patients, he limited his practice to the poor and the Royal Family.

Hufeland's chief popularity rested on the greatness of his personality. While he made no important discoveries his literary contributions had a marked influence on his generation of physicians and in his volume on the prolongation of life, "The Makrobiotik," he emphasized the rules of hygiene and sane living.

His "Enchiridion Medicum" was his last testament to his colleagues. In the introduction to this book he states that after fifty years of practice he could do nothing better than publish this text which contains the results of his life's experiences. The book was the product of daily notations made in his leisure time. Perhaps if more medical books in our day were written with this idea in mind, they would contain more of real value because, after all, a superior medical book should record not only the work of others, but that of a lifetime of experience based on careful investigation and close observation. He who writes his book before he is matured has built castles in the air; but he who writes it in his maturity and in the ripeness of his knowledge builds on a firm foundation. Hufeland directed that the manuscript should be printed after his death. He also directed that the proceeds from the sale of the book should be devoted to a fund established for the relief of needy physicians. In his closing words he states that his book appears without any desire to secure for himself honor or reputation. "I am happy to have reached an age when these considerations no longer stir me. It is a befitting tribute which I think I owe to the world before my departure."

The medical portion of this volume is still of interest though for the most part the doctrines are obsolete. The closing chapters on medical ethics and the relation of the physician to the sick, to the public and to his colleagues are most striking and constitute a classic in medical literature. The principles of the conduct of physicians, as laid down by Hufeland, became the code for the guidance of the profession. The greatest continental physicians were influenced by these moral teach-

ings. It is reported that the oft-used expression of Nothnagel, "A good doctor must be a good man," originated in the thoughts and writings of Hufeland. It is true that about the same period that Hufeland was writing his moral precept, a "Code of Ethics" with a "Discourse on Hospital Duties" and on the "Conduct of Physicians Toward Apothecaries" was published by Thomas Percival of Manchester in 1803. Hufeland does not mention Percival nor does Percival refer to Hufeland. The code written by Percival is more in the nature of medical etiquette and procedure, precedence in hospital practice and does not contain the lofty preachment of Hufeland's essay. It must be remembered that this German doctor had lived a long life, had been a general practitioner, a professor in two universities, an editor and had many diverse human contacts, and above all he was a man whom we may designate as of the spiritual type. The directions to his colleagues came from a medical evangelist, one who was imbued with a high moral purpose and felt inspired to dedicate to the profession, a book, which should contain his life's medical experiences, and to give utterance to ethical principles which should elevate the standards of medical morality. In addition to this we are assured of his sincerity because he left his fortune to be used for the alleviation of the suffering of his medical colleagues and their families. I can do nothing better than to give an abstract of his medical preachments, and I shall leave it for my readers to decide whether some of his moral teachings are not applicable even to this day.

HUFELAND'S MEDICAL ETHICS

The desire to relieve suffering was

the first stage in the development of medical art and must still remain so if the art is to remain pure and noble, and a source of joy both to the practitioner and to humanity.

To live for others, not for himself, that is the chief principle of the physician's calling. He must sacrifice his own rest, advantages, comforts and amenities of life, his own health and life, even more his own honor and reputation for the high purpose of preserving the life and health of others.

The healing art is one of the sublimest and noblest, in that its obligations are intimately related to the first and noblest principles of religion and love of humanity and its practice necessitates self-denial and elevation of the sentiments above the common conceptions of life. Only a pure, moral human being can be a physician in the true sense of the word and only such a physician can find his happiness in his calling, because only such a one feels the existence of a high purpose in himself which raises him above all the joys and cares and life itself. To ennoble his spirit, to sacrifice his personality to a higher life and to spread good about him as much as he can, that is the purpose of his existence. Where can such a moral person accomplish his purpose better than in a calling which gives him every opportunity, and obliges him to lead such a life. The obligations of his profession will always be in harmony with his inner striving and principles and will spontaneously be expressed on this basis. What he must do, he will do with pleasure and the result will be the highest happiness of his life, the harmony of his internal and external life.

Woe to the physician who makes

fame or fortune the object of his strivings. He will be in constant conflict with himself and his duties; his hopes will always be disappointed, his ambitions unsatisfied and he will be occupied in a profession which does not compensate him, because he does not recognize its true rewards.

There is one point of view which expresses the entire morals and ethics of the physician and that is always to act as an honorable and reasonable man must act. Arrange all your activities so that they are in keeping with the highest purpose of your calling, namely, the preservation of life, the restoration of health and the amelioration of suffering.

The relationships of the physician may be considered from three points of view: his relations to the patient, to the public and to his colleagues.

I. RELATIONSHIP TO PATIENT

The physician in the practice of his art must see only the human being and make no distinctions between poor and rich, great or small. The one who is suffering the most or is in the greatest danger should have the precedence over any others, no matter who they may be. The author is sorry for those physicians who measure the worth of the patient according to his position or possessions. These do not know the greatest reward of the physician. What is a handful of money compared to the tears of gratitude in the eyes of his poor patient, who is forever indebted to him? The rich person, through his material remuneration, feels that he has rid himself of all indebtedness and gratitude. How often is the physician the only friend whom the poor person has in time of need.

Should one be so unfortunately constituted as not to find sufficient

reward in these higher feelings or believe that practice among the poor will not help his material progress, let him know that the voice of the relieved poor patient is louder and more emphatic than that of the wealthy, who, by his material compensation of the physician, feels that he has bought the right to be ungrateful to him and to minimize the value of his services.

In his professional duties the physician should exert the greatest attention, accuracy and science. There should be no superficiality, but everything should be done basically and according to his best insight. He should never consider the patient as a medium but always as a goal; never as the mere occurrence of an experiment in nature, or art alone, but as a human being, the highest development in nature.

However, dexterity and art in medicine are not sufficient. Behavior is also very important. By this he recommends himself to the public, and creates trust. By mere force of his behavior alone, the physician with very moderate talents can become very successful and without it the most clever physician will remain unknown and unrecognized. His external appearance should therefore not be a matter of indifference to him, but should correspond to the worth of his calling and its important responsibilities. The chief qualities of his behavior should be: to inspire confidence, to be friendly but dignified, respectable without affectation, cheerful without being jocular, serious wherever it is necessary in order to give weight to his words and to circumstances, agreeable and obliging in all non-essential matters, but steadfastly firm in the carrying out of important regulations and maintain-

ing his judgments; neither monosyllabic nor garrulous, nor gossipy; his whole attention should be devoted to his patient, observing every circumstance. Everything should be inquired into carefully and the patient's surroundings carefully observed. Neither over-excited nor common, neither a fop nor a pedant, but keeping to the happy medium in everything; neither vehement nor passionate, but calm and discreet, because only a quiet thoughtful mood creates confidence. It is a great and common defect in young physicians that they take up whatever will excite attention, whether it be the newest modes in dress or science, or paradoxes and unconventionalities or even quackeries. But there is a great distinction between that which causes a sensation and that which creates faith. The former hinders the latter, and it is only through the latter that a permanent success is founded. The sensational excitement may cause the physician to be talked about for a time and become a vogue, but soon the stimulation of the novelty ceases and the meteor comes to the end of its course. On the contrary quiet, righteous and persistent merit may remain unobserved for a time, but it is the basis for a more lasting and beautiful success in the future.

An important and often neglected point is the keeping of a good diary. When the turmoil of the day is over and the quiet of the evening is conducive to restful contemplation, he should devote several hours to quiet thinking about his patients, jotting down the most significant points in the patients' history, the changes that occurred, his ideas and observations on the origin and treatment of the disease, the remedies applied, etc. Here, in the silent night, many things

will seem quite different than they did during the daytime; here inspirations and solutions will come which were impossible during the excitement of the day. Only that which our innermost self grasps and feels, that which unconsciously always accompanies us, can lead us to greatness and complete development and to new discoveries.

Someone once asked the great Newton how he had happened on his extraordinary discoveries. "I continually thought about them," was his simple, but comprehensive answer.

This daily habit of keeping a diary is indispensable for self-development. The greatest physicians, Boerhaave, Fr. Hofmann, Stoll, etc., practiced it and recommended its advantages. Besides, one has the great advantage of collecting personally observed case histories, a treasure of personal experience and a means of noting and comparing the successive changes in one's viewpoints and methods, not to mention the benefits which the patients derive from such a procedure.

Calling on Patients. Mere physical presence is not to be considered as a call and the diligence of the physician is not to be measured by the number of calls. The genuine visit to the patient should be made calmly, with complete presence of mind, should be not too short of duration, the physician's entire attention being devoted to the study of the patient. Such visits give the patient more faith and confidence and the physician gets a more fundamental impression of the case. One such visit is worth numerous hurried visits. In long drawn out illnesses the latter presents a fresh view of the case and one does not see the woods for the trees.

An important rule in practice is never to give up hope, or to lose

courage. Hope generates ideas, raises the spirit to new viewpoints and new attempts and can make the apparently impossible, become possible. He who does not hope any more, also does not not think any more; apathy and spiritual paralysis are the inevitable results and the patient must necessarily die, because his physician has already died. Even in death the physician should not forsake his patient; here, although he may not be able to save him, he may at least ease the agony of departure. The highest purpose of the healing art is to maintain and prolong life and every physician has given his oath to do nothing that will shorten the life of a human being. This point is of the greatest importance and should not be deviated from a hair's breadth.

The physician must and should maintain life; whether it be fortunate or unfortunate, whether it be worthwhile or not, this does not concern him at all. Should he take it upon himself to decide these issues, he might become the most dangerous being in the State.

Not only by his management, but also by his words and utterances the physician may influence the duration of the patient's life. It is thus his sacred obligation carefully to watch for and avoid anything that will depress the patient or make him lose courage. Every word, every expression, every gesture must be cheering and invigorating. He should consider that the patient views in him the Judge over Life and Death and that he anxiously looks for the decision in the expression of the physician's eyes, in his cheerful or sorrowful attitude. Fear of death, anxiety and terror are the most dangerous poisons and tend to shorten life, whereas hope and

courage are the greatest invigorating remedies, without which even the best medicines lose their power.

To give the patient news or information as to a fatal outcome is to cause death and this is intolerable in a profession whose purpose is to prolong life. Even when the patient, because of business reasons, demands to know the truth, one should not make him despair of living. Hufeland mentions two cases in which the patients insisted on knowing the truth, and when informed of the incurability of their malady, they committed suicide.

The chief thing in the management of the patient is that one should have completely fulfilled his duty and this is and should be the greatest reward regardless of good or bad public opinion or regardless of the outcome of the illness.

II. RELATIONSHIP TO THE PUBLIC

For no one is public opinion so important as for the physician. In the true sense of the word he is a man of the people and the voice of the people passes judgment over him. It must be his most urgent concern to have this opinion in his favor and he should disdain no method which will accomplish this purpose. It is an evil pride in young physicians which leads them to disdain public opinion. The true pride of the wise man consists in accomplishing his purpose as completely as possible; but he who would accomplish his purpose must also use the means to that purpose.

The chief purpose of the physician is to heal. The more opportunity he has to do this, the more fully does he accomplish his object as a benefactor of humanity. The general good opinion is an important factor in this connec-

tion and the effort to attain it is one of the obligations of a sensible physician.

It is true that extraordinary talent or exceeding good fortune may attain favorable public opinion even against a general opposition. However, this is a rare exception. The usual case is that where the young physician must gradually acquire the good will of the public so that it then has faith and confidence enough to entrust its life and health to him.

The chief means to this end are faithful and scientific care of the patient, immovable rectitude, an orderly life, moderation, discretion in his opinions and judgments, care in the choice of companions, attention not only to essentials but also to appearances. The physician, particularly the young one, should never forget that he is under observation more than any other person. He belongs to everyone. Everyone has a certain interest in knowing him since he may some day entrust his life to him, and everyone permits himself the right to judge him.

The physician belongs to no sect or group, but to the whole. Popularity is his natural element and freedom of spirit and political relationships are his noblest prerogative. He should be careful lest he become affiliated with some political party or with associations which may force him into it. He should congratulate himself that his calling permits him, even forces him, to be exempt from political parties and such affiliations, and to see only the human being.

It is very commendable and useful when the physician speaks and writes for the improvement of general health, as well as for the treatment of the sick. This is one of the surest and

most noteworthy means which the young physician may utilize in getting the recognition of the public. However, he should use foresight and discretion when he proposes to attack the fixed opinions and favorite habits of the public, because by too stormy or incisive an attack he may ruin his chances to improve these matters and incur the hatred of the public besides.

Wit and a tendency to satire are very dangerous qualities in a young physician. In no one is this so detrimental and incongruous as in him to whom one is to expose himself in all his nakedness and tell all his weaknesses and secrets. Certainly the larger part of the public would rather trust one with a less gifted or less brilliant intellect than a banterer or wit. Many a one has made an implacable enemy through an attack of wit. People forgive more readily a real insult than mockery.

Above all things the physician should avoid gambling, drinking or sensuality, because these are in complete contradiction to his calling and destroy the faith of the public. The first diminishes his interest in the patient, the second robs him of his head, and the third destroys the purity and integrity of his character, which is indispensable in the physician's relationship.

It is quite advantageous when the physician is married and leads a happy, domestic life. He will thus not only create more confidence in the feminine part of the public, but also will thus ward off any suspicions or imputations.

Every appearance of greed must be avoided. It demeans the physician and the art, frightens away the poor patient, and destroys that which is

worth more than all wealth, a good name.

III. THE RELATIONSHIP TO COLLEAGUES

This is twofold: partly general, partly in relation to the patient.

The first principle should be mutual esteem and when this is impossible, at least toleration. Nothing is more difficult than to judge other people; particularly difficult is this in the healing art. It is unpardonable enough in the general public, but it is absolutely revolting when physicians, who realize the difficulties of practice, criticize their colleagues with severity, hatred and depreciation, exposing errors in a way that will disparage their colleagues and elevate themselves.

He who undervalues or disparages his colleagues degrades himself and the profession.

The more the public hears of physicians' errors, the more suspicious does it become of the physicians, and the less confidence does the art receive, which becomes a reflection not only on the profession, but, eventually, on the individual fault-finder himself. Certainly the public would be less critical and suspicious of the profession, if the physicians themselves did not lend occasion and bad example for such attitudes. Such behavior is opposed to the first principles of morals and religion which command us to overlook and excuse the faults of others and such conduct in a physician merely depreciates his own standing in the eyes of any intelligent person. By whatsoever standard we judge we ourselves shall be judged. He who behaves towards others in a hard and haughty spirit, will also be treated thus in all justice. Modesty in behavior and in opinions, particularly in a young physician will make

friends for him among his colleagues, will give him more opportunities for learning and will subsequently lead to his more complete internal and external development and progress.

As yet the healing art has not attained that degree of completion and certainty which offers final judgments on every mode of therapy. Nor do we possess a code which is generally and fundamentally authentic and valid. Each one is still free to form his own conceptions as to the organism and its management, as long as it does not conflict with reason and experience. No one can deny that we may arrive at our goal by various paths and that apparent conflicts in treatment may be harmonized by the complex reactions of the organism. Truly, organic nature is not so narrowly limited as our particular system.

Experience and the judgments resulting therefrom are the greatest truth in medicine and the longer and the more intelligently the physician observes the reactions of the living organism to the external world and to therapeutic measures, the more versatile does he become and the more complete his development in the healing art. Every one is entitled to his own system and point of view; only let him not believe that he is the sole possessor of the truth. He should have consideration for the opinion of others, particularly of older and more mature physicians and should realize that he who thinks he knows all is in the first stage of the art, while the beginning of doubts and the recognition of one's ignorance are a sure sign of and the only means to progress.

The young physician should cherish the older physician's maturity of judgment, his practiced vision, his compass of thought and fundamental

knowledge, his critical faculties, his practical tact, his art (which truly makes the great practitioner and which cannot be learned but is acquired by experience), his ability to apply general knowledge to the particular case, and to individualize in the management of the particular case, his knowledge and estimation of remedies with their detailed and specific characteristics and finally his accomplished art in adapting himself correctly to the place, time and means. He should by his modesty, thirst for knowledge and sensibility, earn his senior's confidence and friendship, should ask his advice in difficult cases, utilize his broad knowledge, and he will thereby not only gain much for his own development, but will also create for himself a support or protection which every young physician needs.

The older physician, however, should value the young practitioner's fresh point of view, his new view of nature and art, his energy, his thirst for knowledge, his struggle for the truth, his industry, his scientific training. He should remember that he himself had also to travel this path and should recall how difficult it is for the beginner. He should treat the latter in a congenial and fatherly manner, share with him out of the treasure-house of his experience, should in confidential hours in a kindly manner point out his errors and excuse them and cover them from the public, and particularly in consultations he should be careful and humane, because an opinion of the old master may affect the entire fortune of the young man.

RELATION TO PATIENT

The too frequent use of consulta-

tions is problematic. If the opinions of both are the same, there is no need for consultation; if different, there may be considerable doubt and confusion. However, there are instances where its use is unavoidable; when the illness is very involved and persistent, and the physician becomes uncertain, when the patient begins to lose faith, when great responsibility is attached to the cure, or when the emotions are too profoundly affected so that the physician cannot trust himself.

Consultations to be of real service must have the following characteristics:

The consultants should not be too numerous. Two, at most three, physicians are sufficient. The physicians should not be enemies, stubborn minded, nor partisans of any particular sect or fad, but matured through experience and have ability to understand and sympathize with other

points of view. They should occupy themselves with the diagnosis, etiology, and nature of the ailment and the mode of treatment. The conduct of treatment should be left to the physician in charge.

The patient should not be a witness of the consultation but should be informed of the most essential points which resulted from the conference, without causing alarm or fear.

This in brief records the life history and the thoughts of Christopher Wilhelm Hufeland. There are undoubtedly many names recorded on the pages of medical history who have made more important scientific contributions to medical knowledge though there are few who have so consistently exhibited the qualities of an ideal doctor, a moralist, a philosopher and a gentleman, who influenced in the same manner his colleagues, contemporaries and successors. No life could be more complete.



INTERN SERVICE IN THE OLD DAYS AT CHAMBERS STREET HOSPITAL, N. Y

By J. B. CUTTER, M.D.

SAN FRANCISCO, CALIF.

SERVICE at "Chambers Street" Hospital in the early nineties was unique. I look back upon the experience as an out-standing epoch in a life that has been marked by many unusual turns in the wheel of fortune. There was a poetic touch in the pathos and humor of many of the scenes enacted there, and there was a wealth of medical and surgical experience of that sort peculiar to an Emergency Hospital serving the densely populated region in the heart of the commercial shipping and industrial districts of a great city, such a great city as is only represented by London, Paris, Chicago and New York.

It was romantic, as that may apply to the thrilling adventures in the early days of the study and practice of medicine, to that rare taste of life which came to the medical student of that heroic period when he was the apprentice as well as the companion of his preceptor, and closely wrapped in all the interests and responsibilities which he assumed and which were thrust upon him in this unique relationship.

It was also an important period in the character-forming years of the young physician, when the budding love of humanity and the love of profession slowly unfolded and bloomed together. And it was interesting because the atmosphere of medicine in that gay period was charged with the spirit of adventure, with the high purpose of achievement, with a sense of devotion and with the charm of idealism.

To the student and to the young physician, his preceptor embodied those winning qualities so well described by that rare Scot, Robert Louis Stevenson, of whom he said and of his kind, "He is the flower of our civilization, and exhibits the virtues of the race, embodying those qualities of generosity peculiar to those who practice an art and never to those who drive a trade, discretion, (tact, perhaps the fairest fruit of character) with cheerfulness and courage, bringing cheer and air into the sick room, and healing when he can."

Is not that romance of the truest sort that is built on the cornerstone of love, greater than which is known to no man more than to the physician, and in the period of which I write the period of "the Family Doctor" he had mounted the highest peak in that interrelationship of friends, the doctor and the patient, since which he has often against his inclination, yet never the less moving forward with the tide of inevitable change in the onward stream of civilization, begun the descent from that eminence into the valley of material rather than spiritual relationships.

Old "Chambers Street," as it was known throughout the world, through that amazing epoch of the history of American medicine was perhaps the most noteworthy school in this country for the education and training of that type of physician to which I have referred and during the decade of the nineties this was largely due to the dominating personality, the noble qualities, the shining example

of that master surgeon, Lewis A. Stimson.

"Chambers Street" Hospital was a law unto itself in the peculiar field of medicine which it served, occupying a strategic position in the lower end of Manhattan Island, between the shipping district of Christopher Street on the North River as far as Grand Street on the East, including between them the commercial and industrial sections centering around South Broadway, (two blocks west from which on Chambers Street it occupied an old brown-stone English basement dwelling, not too highly adapted to its multifarious purposes), an area extending as far as "The Battery" on the south. It performed indeed an important function in the daily life of the City of New York.

"Chambers Street" Hospital or as its official title was, "The House Of Relief Of The New York Hospital," took the place of the Emergency Hospital for the Municipality of New York, for all that territory south of Canal Street, and for years it held these front line trenches practically unsupported, save for Bellevue on the east at Twenty-sixth Street, and St. Vincent's Hospital on the west. It was indeed a far-flung battleground.

Appointment on the House Staff of "Chambers Street" Hospital in the early nineties was a coveted honor, which was dispensed through the favor of its chief, usually after a probationary service of two months in the Dispensary or Out-Patient Department as it would be called today. This appointment was not open to competitive examination as in the case of the other hospitals in New York. Doctor Stimson reserved judgment on its applicants, after careful scrutiny and personal examina-

tion over this two-months' period, as a rule.

Who then among the eager, hopeful medical fraternity of that time would not receive a thrill of joyful satisfaction after the painful grinding years of preparation in medical school, especially if arriving in New York from a small university in a far Western metropolis, to find himself in this long coveted position as a member of the house staff in the most active acute surgical service in New York, numbered among the illustrious names which grace the list of the House Surgeons of the House Of Relief of the New York Hospital, headed by Charles B. Kelsey and William T. Bull, dating back to the historic period of 1875.

Such was the experience of the writer, when after the two-months' Dispensary service, followed by a voyage to Lisbon and The Azores Islands as ship's surgeon of the S. S. Vega of the Empresa Insulana de Navegacon, he landed in New York after a tempestuous voyage near the first of February (date of the assignment) and after a trembling interview with the august Chief, he was confirmed in this sixteen-months' appointment.

The subsequent early adventurous years in medical experience, including army service during the Spanish American War; railway service in the frontier state of New Mexico (we have no frontier states now but we did have in those days), mining practice in the wilds of Idaho; and on the Mexican frontier in the hotbed of banditry and outlawry of the famous copper mines of Cannanea, did not compare in charm and interest with that Old "Chambers Street" internship in 1895.

Still in memory resounds the clang of the ambulance bell as the ambulance swung around the corner, driven

tion common to such scenes, making gangway at first sight of the ambulance surgeon who with white coat



FIG. 1.

by a Jehu in the cap and uniform of the hospital. Making a dash for the rear end with hand grasping at the brass side rail, foot catching he low swung step behind, and with a dextrous and characteristic swing of the body, throwing both legs over the seat occupying the back of this unique vehicle, they were off.

The first ambulance call might be to an outpost somewhere in the "Bowery" where case in hand the ambulance surgeon drops off at the arrival of the ambulance at the curb, to find his patient seated on the pavement in semi-reclining position, supported by the building against which he leaned. Around were the congrega-

and cap, bearing the insignia of the Hospital was a privileged personage on all such occasions and felt the dignity and importance of his position where his slightest word or nod was law.

Hurriedly unbuttoning the coat so as to open the vest and shirt for the application of the stethoscope above the heart, he found the patient as he appeared to be, quite dead; but the mingled feelings of the surgeon may be imagined as on placing his ear against the chest to detect if possible the slightest motion of the heart, he is startled by the sudden appearance of a tiny chameleon darting forth from beneath the lapel of the vest, to

which it was attached by a miniature gold chain and collar around the throat. Would not this episode fix for all time the memory of that first ambulance call?

Grappling with a delirium tremens patient all the way to Bellevue would provide athletic exercise as well as professional interest. Such "pick-ups" were immediately transferred there. The long drive back from Bellevue seemed often brief in the varied contemplative interest that the drive afforded. Passing down the lower end of Fifth Avenue through what is known as "Greenwich Village," through the purlieus of Hester, Pell and Mott Streets, the ambulance surgeon found fruitful themes for study in the motley maze of sociological medium where a mixture of Oriental color (and odor), varied hues of dress from the Mediterranean, swarthy visages from the Balkans and from the steppes of Russia, formed ever-changing pictures before his eyes.

That the ambulance service at "Chambers Street" was an important and heavy part of the service may well be judged by the record of the work done during the sixteen-months' period referred to. In the year, 3623 calls or an average of ten in the twenty-four hours, at least one-third of which occurred between seven at night and seven in the morning, were made and the three assistants to the House Surgeon divided this work between them. This however did not mean uninterrupted sleep for the remaining nights, for the night dispensary service was also heavy and divided. The average number of visits to the dispensary was more than 110,000 in the year, and a good proportion of night calls was the rule. Restful nights were not an inducement

to the "Chambers Street" service. Of the 3600 ambulance cases brought in 1200 were transferred to other hospitals, so that this number must be added to the number of calls credited, making a grand total of over 5000 ambulance calls a year.

Among the cases brought in by ambulance were many of unusual pathological interest, and Doctor Stimson was ready to respond to the house surgeon's call at any hour of the day or night to see fractures and luxations of such a character. One such case, a thyroid luxation of the thigh (the second one ever seen by Doctor Stimson in a life long experience as a world authority in fractures and luxations) proved to be a case célèbre. The house surgeon in charge, who was the writer of this article, was directed to reduce the dislocation under the direction of Doctor Stimson. Following is the official record of the case.

Ferdinand Giersch, age forty-two, German, 314 Grand Ave., Hoboken. Longshoreman. Brought in by ambulance surgeon Sanger. Was easily diagnosed as thyroid luxation of the right thigh, showing the classical deformity of abduction, eversion and outward rotation. The position quite characteristic is seen from the photograph taken at the time and later included in Doctor Stimson's textbook ("Fractures and Dislocations," by Lewis A. Stimson). As many as possible were called in to witness the unusual deformity, and the further record of the case shows those present to have been, Dr. C. C. Carmault, Dr. John Rogers, Dr. H. S. Leake, Dr. Fielding Lewis Taylor and Drs. Barstow, Howell, Grandy, Ford and Sanger.

Dr. Stimson's operation of mediate ligation in fracture of the patella had ample opportunity for trial on the

serv
ope
Apr

oper
whe
still
as v
long
incl
hopi
neve
tissu
the
met
line
the
care
bone
teum
wire
after
a p
brok
heav
ligan
ceps

service of the writer, as 12 cases were operated upon between February and April. The outstanding features of the

ture, at right angles and serving as a sort of splint to prevent upward tilting of the fragments.



FIG. 2.

operation, widely done at this period when the treatment of this injury was still a matter of surgical controversy, as we were just emerging from the long drawn-out expectant treatment, inclined plane in bed, strapping and hoping for the osseous union which never came, a band of elastic fibrous tissue connecting the fragments being the best result obtainable under this method, were, free incision above the line of fracture, thorough clearing of the joint of debris clots and shreds, careful apposition of the fragments bone to bone, suturing the torn periosteum and retention, not by drill and wire but by strong catgut ligatures, after closing the torn periosteum, one a purse-string ligature round the broken patella and the other a very heavy retaining ligature through the ligamentum patellae and the quadriceps tendon, crossing the line of frac-

It has been the writer's privilege to perform this operation many times following my service at "Chambers Street" Hospital with almost uniformly good results, yet have I rarely ever seen the name of Doctor Stimson associated with the operation which was a distinct step forward in the treatment of this very serious injury.

Another case of unique importance luxation of the ulna alone without involvement of the radius was seen for the first time in the annals of injuries here by Doctor Stimson and was reported as follows: John Shea, age thirty-five brought in by ambulance, March 13 1895, reduced by manipulation and retained by rectangular splint.

In searching for the record of a case of this rare dislocation, as recorded by Sir Astley Cooper, in The British Medical Museum, Dr. Stimson

found the case to be one of mistaken diagnosis, the callus in the unreduced luxation being mistaken for the head of the bone. The case reported remained unique in traumatic medical annals at that time.

Many cases of perforating ulcer of the duodenum, depressed fractures of the skull, operations for appendicitis, in various stages, are reported in the sixteen-months' service referred to. At that time the present high percentage of recoveries in operations on the appendix was not usual as now. Indeed this operation like operation on the patella was a subject of dispute, and there were then the two schools of treatment, one the conservative, advocating the medical treatment of the appendix, the other, the radical, beginning courageously to fight for its position.

On the ambulance service at "Chambers Street" there was a sportsman's thrill of adventure in the anticipation of the kind of case that would result from a "hurry call" which was not uncommon every day. While there was nothing tame about struggling with a delirium tremens patient all the way up to Bellevue Hospital, or a moment's dullness in bringing the head successfully over the perineum while the patient was lying against the curbstone or on the floor of a public building as occasionally happened, or even while holding up the sailing of the Fall River boat at seven in the morning, while the toilet of a precipitate labor was consummated to the satisfaction of the young surgeon's high standard at the time, there was a peculiar and added zest in the encounter with those bizarre and grotesque specimens of humanity who took an ambulance call as a means of gratifying a peculiar form of

curiosity, pique or spite, or sometimes to gather material for a Sunday morning write-up in the *Daily Whirl*, as the leading yellow journal was then dubbed.

That unholy love of exploiting hospitals in the daily press which at that time was so common, often brought embarrassment to the staff because of the sensitiveness of "the Chief" who took these attacks as a reflection on his personal service at the hospital. Any enterprising reporter, man or woman who really wanted to see the inside of the Receiving Ward of "Chambers Street" Hospital at two o'clock in the morning, situated as it was in the midst of that downtown district where hold-ups, murders and all sorts of crime were only common experience, was pretty sure to have his ambition gratified and find material enough for thrills for the front page if he happened to drop in after an ambulance call to "Cat Alley" or "Double Cat" Alley or Cherry Street after one of the "mixed-ale" parties of the evening. If the need for the call to that aristocratic neighborhood happened to be the result of an argument between Mary Ann O'Flarity and Bridget O'Hoolihan about the ingredients of the "mixed-ale," then there was apt to follow in the Receiving Ward a scene not only interesting from a medical point of view but one apt to raise the hair on the head of the enterprising reporter.

As in the experience of the writer the following Sunday *Whirl* came out in glaring colors on the front page describing the experiences of being brought into the hospital and painting a vivid picture of the reception that had been offered on arrival, the puzzled ambulance surgeon would suddenly recall that the night before

he had had a call to City Hall Park, had found a lady lying on a park bench, apparently in great pain, that

ing experiences, but they were part of the human ensemble and fairly describe the real atmosphere of the Re-

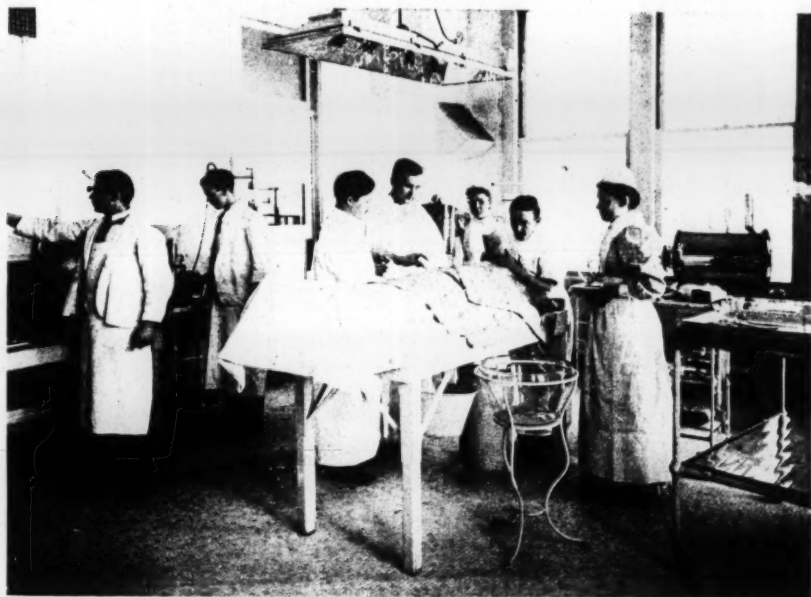


FIG. 3.

he had tenderly examined her as best he could in the circumstances, brought her to the hospital where she was given the best hospitality possible at such a time and in such a place, and he would begin to gather a glimmer of understanding of her reference to "the coffin" that stood in the end of the ward on end as the portable bathtub that served for the ablutions of our delirium tremens cases at that time, and the wild sounds that emanated from the adjoining room suggesting the murder of an inmate; as the unearthly yells from the throat of a delirious "mixed-ale" victim or a wild man perhaps from the jungles of Hester Street, who had escaped from the clutches of his adversary but still imagined himself pursued. These were not mellowing or comfort-

ceiving Ward at "Chambers Street" Hospital at two in the morning in the early nineties.

Frequent testimony at the police courts of the district was another of the diversions of the ambulance surgeon and one upon which he looked back in later years as an experience and education in the matter of medical jurisprudence not to be duplicated. These adventures in the courts of law often gave spice and flourish to his otherwise at times somewhat sordid existence. Certainly the ambulance surgeon could do no less than respond when called upon to testify as to whether the wound which was the result of an attack upon the witness during one of the frequent "mixed-ale" parties at the hands of Mary Ann

O'Flarity was a bite (not infrequent) or produced by some blunt instrument.

Ambulance calls covered the most out of the way districts in the neighborhood of the Brooklyn Bridge, the East River water front, and the Battery, and the docks and dark and gloomy alleyways were visited in the dead of night under the somber glare of the ambulance head light, as the only means of illumination, all else being as dark as the depths of Erebus.

"Steve Brodey's" saloon down in the Bowery was a place of celebrated fame, and was a sort of headquarters for the dressing of scalp wounds and the taking care of simple injuries when the patient was then turned loose or repaired to the nearest police station. This old rendezvous was given a peculiar charm and romance through the personal slant of one of our most beloved members of the staff, O. D. F. as he was familiarly known, or "Old Doc Ford" as we affectionately called him. A bond of friendship had been formed, of his peculiar type, and the famous "Steve", bridge jumper and all-around sport, was the avowed friend of what to him was "The Ambulance Surgeon Fraternity." All ambulance surgeons were given signal attention by "Steve", when they appeared in Steve's neighborhood.

The Ambulance surgeon in any of these strange and out of the way places of the city was the first one on the scene after murders and crimes of all descriptions, as the call for the ambulance usually preceded the call for the police. His arrival was therefore of prime importance in the jurisprudence of the case, and even in the depths of those lower town hells where the Chinese and whites lived in promiscuous profusion, and where human life was held in light esteem,

he was as safe as in the precincts of the hospital.

Serious criminal cases sometimes dragged along in the courts for weeks and each morning it was necessary to report to the Tombs or to General Sessions to give testimony.

In the strange case of Miss Fuller who was found in the office of her employer Lawyer McGee, by the ambulance surgeon, dying from a gunshot wound, the testimony of myself as the first person to touch the body after the shooting, was vital on the point as to whether the victim could herself have inflicted the fatal shot or not, as the evidence was brought forth by the prosecuting attorney that she could not have discharged the pistol for the reason that the glove on her right hand was found pulled down over the hand in such a way that to hold or discharge the weapon would have been impossible, and so it remained for my testimony that I had myself so left the glove, in my effort to reach the wrist to take the pulse to show that she might have shot herself, and thus the point that she must have been murdered was not proved.

As already mentioned, at the time of the writer's service at "Chambers Street" the reputation of being the most active acute surgical service in New York was easily sustained and the following reference to the record of the Out-Patient Department during the year 1900 will add verisimilitude to this statement.

Taken at random the outstanding list of cases reported were classified as:
Operations.

Amputations.....	211
Foreign bodies removed..	597
Incisions.....	1142
Tenorrhaphies.....	29
Wounds, blank cartridge.	27

Luxations.	
Humerus subcor.....	44
Radius and ulna.....	19
Radius and ulna backward	4
Phalanges.....	28
Fractures.	
Head and trunk.....	258
Upper extremity.....	399
Lower.....	156

A total of 813 fractures, 119 luxations, 2088 operations, and a grand total in the Out-Patient Department alone, of 17,594 injuries, 11,348 surgical diseases, 13,033 medical diseases, and a total number of visits to the Out-Patient Department of 110,597. Ambulance calls 3623, transfers to other hospitals, 1206

In addition to these, there were 2386 patients admitted, to the wards during the year, so that in this outstanding service of sixteen months in the In-Patient and two months in the Out-Patient Departments, eighteen months in all, there was a fund of work done and seen unequalled in any hospital in this country at that time within that period.

Domestic life, if that necessary provision for food and shelter may thus be designated, at "Chambers Street" was sufficiently provided for, but for any thing more than the assurance of three good meals a day, and a bed (two in a room) on which to throw one's tired limbs, it certainly was not expected. We did look forward to Thursday night, when our house officer gave us raw oysters at dinner, this the one great treat of the week; but the meals were good and wholesome, and we were ready for them when the hour arrived. The active life (much of it spent out of doors) gave us hearty appetites. If it so happened that the regular meal hour had passed while on a hurry call to the Bowery

or a too long detention on a frosty morning, it was "do the best you can" unless as sometimes happened our kind and humane superintendent of nurses had ready on our return a dainty poached egg, crisp toast and a cup of tea. These tender bits of romance will remain while perhaps more serious episodes will fade from memory forever.

If the professional training with its wealth of material and the best of bedside teaching was an asset in the summing up of the medical capital gathered through these very busy and intensive years of work, there were too certain fundamental principles installed which "time will never wither nor custom stale." These were bred into the professional bone and marrow of the young surgeon during those eighteen months and the precepts of Lewis A. Stimson and Lewis A. Connor, Chief-in-Medicine during the latter part of the service, became the guiding star to all future discoveries.

I may say that simplicity and direction of action were the outstanding characteristics with Doctor Stimson in all surgical procedures. An armamentarium reduced to its lowest terms, a technic above suspicion (antisepsis rather than asepsis was the rule in the early nineties), Surgery had not yet (strange as it may seem today) reached that pinnacle of scientific exactitude of which modern surgery is the symbol today. Hospital procedure then participated in the realm of experimental medicine.

The practical extent to which the tenets to which I have referred were carried and that they were no mere platitudes may be judged by the fact that all our surgical and operating room preparations were marked by certainly the extremest simplicity and

lack of consequentiality, if this will express what I have in mind. Interns spent their spare hours which were few and far between, in the preparation of catgut ligatures and sutures. The raw catgut was procured in bulk, immersed in ether, wound on glass spools, dropped into a small glass jar of alcohol and boiled in a water bath the requisite number of minutes to insure asepsis. Horse hair sutures, very favorite material for the closing of scalp wound and small incisions, were procured by robbing the horses' tails in our own ambulance stables. Washed and aseptized they were ready for use in large quantities. Gauze was also procured in bulk cut into large sponge sizes and sterilized en masse. Bandages were torn and rolled from bleached muslin, (gauze bandages were a luxury not tolerated at "Chambers Street,") and were kept immersed in solution ready for dispensary or ambulance use in large quantities.

I am certain that to the eye of the present generation in medicine these references to our homely practices seem rather crude and perhaps unnecessarily primitive. They were however the reflection of that pure and noble character, of our Chief who went without deflection to the point desired.

If with Cicero we believed that "The great things of the world were not achieved by activity, exercise or nimbleness of body, but by deliberation, character and the expression of opinion," certainly we had not arrived during our active professional apprenticeship at "Chambers Street," at that contemplative age and we found the former attributes of much service in our year and a half at least of this stage of medicine, but in contemplating from this later day the whole

matter, how shall we compare from any standpoint the experiences of then and now?

Where is old "Chambers Street" today? Alas, it is no more. It remains preserved in memory among the most valued traditions in the hearts of that generation that flourished there during that epochal period of some fifty years between the end of our Civil War and the end of the Great World War. Its immense service to the developing medical profession of that formative period and to the public in the municipality of New York which it served so unselfishly and so faithfully can hardly be overestimated. Its service was without money and without price. The New York Hospital, the second hospital established in the United States by Royal Charter from George the Third, granted to "the Society of the Hospital In The City Of New York" in 1771, maintained the service gratuitously at an annual expenditure of some \$35,000.

The "House Of Relief" as it was officially designated was so important a part of the great charity of the New York Hospital, that it was delegated to the care and oversight, practically without restriction, to one man, (being the history of many if not most of the great enterprises in the realm of medicine, nursing and the most notable benevolences). For many years that great master of surgery, Lewis A. Stimson, was the benevolent autocrat of "Chambers Street" Hospital.

At near the close of the service of the writer in June, 1895, the old building with its sweet as well as its unsavory remembrances was closed and "The House Of Relief, or "Hudson Street" Hospital as it was afterward known, took up its quarters in a new and thoroughly modern hos-

pital building especially arranged and erected for the purpose by the Society of the New York Hospital on the corner of Jay and Hudson Streets. Here were installed many of those conveniences thought most suitable to the peculiar need of that downtown emergency service. During the "Heated Term" as it was always called in New York there were many calls on account of sunstroke or insolation. As many as twenty calls in the twenty-four hours were responded to by the ambulances. The treatment was vigorous, consisting principally in alternate immersion in ice water and flagellation, stimulation and the course repeated. To make this unique method more easily managed an overhead crane operated by electricity was installed along the ceiling of the

Receiving Ward, and from its track was suspended a hammock and this was let down by an automatic switch first into the tub of ice water then onto the table and lastly on the bed.

During the latter part of the World War the "Hudson Street" Hospital was appropriated by the Government, for the use of its Public Health Service in the City of New York. It is now the permanent possession of the government who found the plant so well adapted to their important work that the Government induced The Society of the New York Hospital to turn the property over to them which they did, only in the presence of the fact that other downtown hospitals had in recent years been established for the emergency service in the lower end of Manhattan Island.



THOMAS DALE, M.D.

OF CHARLESTON, S. C.

By ROBERT E. SEIBELS, M.D.

COLUMBIA, S. C.

AT the end of the first quarter of the 18th century, Charles Town, S. C. was a city of considerable importance on the Atlantic seaboard. The seat of government for South Carolina was there, the city being the residence of the Governor, the meeting place of the legislative assembly and of the judiciary. The same period saw the change in government from the unsatisfactory one of the Lords Proprietors to the more stable one of the Crown. The merchants of London, Bristol and Liverpool felt more secure about economic conditions and sent representatives to the city, bettered credit relations and assisted artisans to emigrate to the colony.

Governor Johnson arrived in Charles Town in 1721 and assumed charge in the name of the king. With increased skilled labor, the arrival of ships with bricks in ballast, and improved farming conditions, the city began to take on a more permanent appearance. Brick houses, churches and warehouses appeared, cultured leisure replaced idleness, the arts and sciences began to have scope and encouragement.

About 1725 there arrived in Charles Town, Thomas Dale, M.D., a man who was destined to play a leading part in the medical, social and literary life of the place and to leave his mark, for good or bad, on many phases of its activities. He was born in 1700 and his father was Francis Dale, Apothecary, of Hoxton, England. His paternal uncle, Samuel

Dale, of Braintree, Essex, published in 1693 a "Pharmacologia" which was an early systematic work on pharmacology. His herbarium is now in the British Museum.

The city of Thomas Dale's adoption had early developed social distinctions and the inner ring of society was composed of provincial officials, prominent and wealthy rice planters and members of the learned professions. We may be sure, then, that the doctor came well introduced and was equipped to hold his own in society, for only eight years later, *The South Carolina Gazette* on March 28, 1733 announced his marriage to Miss Mary Brewton, daughter of Colonel Miles Brewton. Colonel Miles (or Michael) Brewton was Powder Receiver under the Proprietary Government and was one of the wealthiest citizens. During this same year Colonel Brewton conveyed to his "Daughter Dale" for "love and affection," the brick dwelling next south of his own residence, which stood on the southwest corner of Church and Tradd Streets. The house thus conveyed has been kept in the original architectural form and is known still as "Daughterdale." A son, Thomas, was born to the couple, but he died October 17, 1736, and a daughter, Mary was buried in the same coffin with her mother, May 25, 1737. On November 23, 1738, he married Anne Smith, who died without issue in January, 1743. A third wedding was celebrated on June 30, 1743, when he married Hannah Simons, who survived him with three

children, Thomas Simons, Jane and Francis. Thomas Simons Dale moved to Scotland where he took his degree

tom, but he took scientific leaders rather than hereditary nobility to lend an air to his publications.



FIG. 1.

at Edinburgh in 1775 and became a Licentiate of the Royal College of Physicians in 1776, and practiced for years in London. He was one of the eight members who instituted the Literary Fund to aid impoverished writers and was its Registrar until his death in 1816. The silhouette of this distinguished son is still preserved.

The medical writings of Dale consist mainly of translations and are of greatest interest because they show a facile knowledge of the Latin tongue, and international acquaintances and friendships. The dedications are to distinguished people, as was the cus-

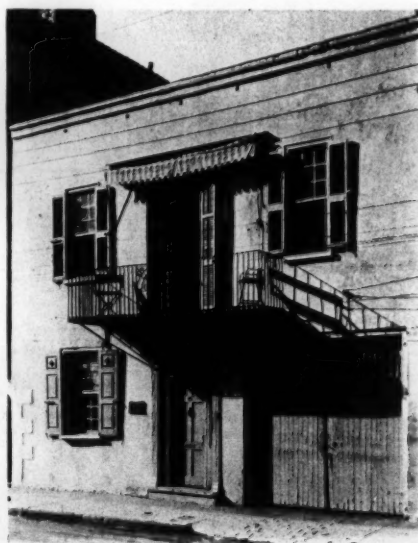


FIG. 2. RESIDENCE OF DR. THOMAS DALE, CHARLESTON, S. C.

The "Emmenologia" of Sir John Freind in 1703, appeared in Latin like all the writings of this author.



FIG. 3. THOMAS SIMONS DALE, (1745-1816).

A French translation by De Vaux was printed in 1730; Dale's English translation is dated 1729, and a second edition, 1752. The contents of the book mark its author as an ardent member of the "Mechanical" school

of medicine in which method of thought he was applauded by his translator.

his colleague had been released from prison.

Dale's English version was dedi-

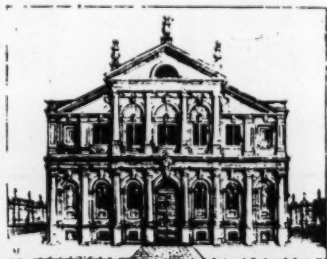
EMMENOLOGIA:

IN QUA
FLUXUS MULIEBRIS
MENSTRUUM

Phænomena, Periodi, Vitæ cum Medendi
Methodo, ad Rationes Mechanicæ exi-
guntur.

AUTHORE

JOH. FREIND M. B. *Ad. Christi Alumn.*



OXONIÆ,

IN THEATRO SHELTONIANO,

Imprimis Thomæ Baskett ad Ingeniæ Litterarum in, Col-
legio S. Pauli: LONDINI A.D. 1707.

FIG. 4A.

Freind was a prolific writer, probably best known for his "History of Physick." The plan for this work was drawn to while away the dull hours of his imprisonment in the Tower. He had become involved in the plot of the Bishop of Atterbury to restore the Stuarts and the plot having become known, he was charged with high treason. Richard Mead, one of the four owners of the famous "Gold-headed Cane" was a friend and correspondent of Sir John's and it is said that Mead refused to attend the Prime Minister in a serious illness until

EMMENOLOGIA:

Written, in Latin,

By the late Learned Dr. JOHN FREIND.

Translated into English

By THOMAS DALE, M.D.

Nonnulla etiam addidit, et emendavit, C. Dale.



LONDON:

Printed for T. Cox at the Lamb under the
Royal Exchange, Cornhill. M.DCC.XXIX.

FIG. 4B.

cated to James Douglas, M.D., the distinguished anatomist, who not only gave one of the first comprehensive descriptions of the anatomy of the peritoneum, but was also one of the early anatomists to make and preserve preparations of his dissections, which he demonstrated without charging a fee (although of Scottish descent!). The name of Douglas is commemorated by being attached to the lowest peritoneal pouch in the pelvis. He nearly anticipated Laennec in using auscultation, as he seems to have heard and clearly understood the significance of the murmur in a case of diseased aortic valves.

Jodocus Lommius (whose real name was Joost van Lom) flourished in the 16th century. He was a native of

Buren in Gelderland and became city physician of Tournay and then of Brussels. He was a classicist of the first water and wrote very much in the style of the Hippocratic school. His best known works were the "De curandis febribus continuis liber" and the "Medicinalium observationem libri tres." We can readily understand what a joy such volumes were to Dale; they possibly made their first appeal to him as a Latinist and a true believer in the teachings of the ancients, and the outbreaks of fever which scourged Charleston in his time, must have precipitated his desire to render Lommius into English. So we find "A Treatise of Continual Fevers—Medicinal Observations in Three Books" etc. bearing the signature of Dale and published in London in 1732. The method of curing continuous fevers applauded by Dale depended "Chiefly upon Bleeding, duly and seasonably administered and a cool and diluting Diet."

The translation of Lommius' "Treatises" is dedicated to his uncle, Samuel Dale. An example of the nephew's style is taken from the epistle dedicatory:

One might be led to hope from the Number of Pieces [of medical literature] which are continually published, that Physick would in a short Time be brought to its utmost Perfection; but such is our Misfortune, that not one in one-hundred is worth the Time a Man spares in perusing them, and all the Matter that may be picked out of them, either for information of the Understanding, or to improve the Art, might be wrote upon the Back of a Card; if not on the Author's Thumb-nail.

He further states in his dedication that he intends to translate into English his kinsman's "Pharmaco-

logia," but we have no evidence that he did so.

In 1738 there was an epidemic of

A
TREATISE
OF
Continual FEVERS:
In FOUR PARTS.

To which are added
Medicinal OBSERVATIONS:
In THREE BOOKS.

Wherein are enumerated,
The **DIAGNOSTICKS, PROGNOSTICKS**
and **EVENTS** of the several **DISEASES**
incident to *Human Bodies*.

By **JODOCUS LOMMIUS.**

Translated from the *Latin*
By **THOMAS DALE, M.D.**

L O N D O N :

Printed for J. BROTHERTON, J. HAZARD, W. MEADOWS, T. COX, W. HINCHLIFEE, W. BICKERTON, T. ASTLEY, S. AUSTEN, L. GILLIVER, and R. WILLOCK. MDCCLXXXII.

FIG. 5.

smallpox in Charles Town and we learn from the Register of St. Philip's Parish that there were 117 deaths from May 30 to September 5. (St. Philip's being the established church, all births, marriages and deaths were required to be registered in the parish register.) A surgeon, Mowbray, and a Scotch physician, Kilpatrick (afterwards called Kirkpatrick, one of the foremost inoculators in England), inoculated 800 persons in Charles Town and had only 8 deaths. The first three persons inoculated were the two

daughters of Mrs. Sarah Blakeway, and a Miss Baker. Kirkpatrick first published his account in Charles Town

believer in old methods and certainly could not be accused of being "always seeking to learn some new thing."

NINE
COMMENTARIES
UPON
FEVERS:
And Two EPISTLES concerning the
SMALL-POX.
Addressed to Dr. MEAD.

Written, in *Latin*,
By the late Learned Dr. JOHN FREIND.

Translated into *English*,
By THOMAS DALE, M.D.



LONDON:
Printed for T. COX, at the Lamb under the
Royal-Exchange in Cornhill. M DCC XXX.

FIG. 6.

in 1739, and again in London in 1743. Dr. Dale seems to have been violently opposed to the practice of inoculation and started a controversy in *The South Carolina Gazette*, which Kirkpatrick answered. These debates were characterized more by bad taste and personal slurs than by arguments of an even pseudo-scientific nature. In his arguments against inoculation Dale shows himself to have been a strong

A
PARALLEL
Of the different
METHODS
Of Extracting the
STONE
Out of the
BLADDER.

Translated from the FRENCH of
HENRY FRANCIS LE DRAN,
Surgeon-Major at *la Charité*, and Demonstrator
of ANATOMY in the same Hospital.

REVISED and CORRECTED
By THOMAS DALE, M.D.

LONDON:
Printed for J. WILCOX, at the Green-Dragon
in Little-Britain. 1731.

FIG. 7.

Our learned physician undertook the translation of another of Freind's books and we may imagine his delight in doing so when we examine its contents. "Nine Commentaries upon Fevers and Two Epistles Concerning the Smallpox, Addressed to Dr. Mead," was printed in 1730 in London. "Bleeding and Purging" were Freind's two stand-bys and one can easily imagine Dale's satisfaction in that his master did not even mention inoculation. These epistles were also written from the dungeons of the Tower, where Freind then lay.

In 1731 Dale's translation of Le Dran's "Methods of Extracting Stone out of the Bladder" appeared. This

volume from the pen of the Demonstrator of Anatomy at La Charité in Paris, is of no interest beyond that associated with its translator. His rendering of French into English is as easy and readable as his handling of Freind's colloquial Latin.

It is curious to remark, in passing, that most of Dale's writings should have dates so close together. One is led to speculate what drove him to this *furor scribendi*: was it the suddenly exhibited result of years of translating or was he driven to it by other motives?

Dale was eminently connected with the early history of the drama in South Carolina. *The South Carolina Gazette* announced that the tragedy of "The Orphan, will be attempted" at the Court-Room on Saturday 24th, of January, 1735 with 40 shillings as the price of admission. During the ensuing weeks other plays were given. During the following year subscriptions were taken and a theater built on Dock Street (now Queen Street) near Saint Philip's Church, and was formally opened according to the announcement of *The Gazette* of January 24, 1735. On Thursday, February 2, "The Recruiting Officer" by Farquhar, was chosen to open the season. Tickets for the boxes cost 30 shillings, the pit 20 shillings and the gallery 15 shillings. After this performance an epilogue was spoken "by Sylvia in Man's Cloaths:"

In truth, dear ladies! 'tis a curious matter,
To prove, TIRESIAS-like, a double nature,
To bid farewell to petticoats and stitching,
And wearing breeches, by their force bewitching;

From belle to belle with jaunty air to rove,
Play idle tricks, and make unmeaning love;
With scandal and quadrille address the dames,
And strut the fair ones into wanton flames;
But faith? I pity Rose, poor willing tit,

Of all her joys, and promis'd transport bit;
Her eager amorous soldier prov'd at last,
As Cynthia cold, or Farinelli chaste;
For how could I, alas! the nymph delight?
Or how perform the duties of the night?
A mere poetical hermaphrodite!

Thus far the bard:—but sure the stupid
rogue

Ne'er wrote before, or ne'er wrote epilogue;
For young performers no excuse to frame!

To your indulgence lay no artful claim!
I'll beg myself then:—Pray forgive our
fright;

Think, ladies, on the fears of a first-night;
Kindly accept our faint, tho' willing toils;
Withdraw not from us your accustom'd
smiles;

Nor mark how ill I personate the rake;
But spare JACK WILFUL for MONIMIA'S
sake.

The Gentleman's Magazine printed this epilogue and attributed it to Thomas Dale, M.D. Law suggests that he may have composed many of the prologues and epilogues that we find were spoken in connection with the offerings of the theatrical season. Be that as it may, Dale was one of the early versifiers in America of whom we have record.

Another rôle played by our versatile physician was a judicial one. Chief Justice Wright complained to the Board of Trade in 1733 of an act which empowered the Governor to nominate assistant justices, and that under its authority Governor Johnson had granted commissions to Thomas Dale and Thomas Lamboll, "persons entirely ignorant of the Law, who assumed to overrule him whenever they thought proper." The assistant justices served without pay or emolument of any kind, simply for the honor of the position and the good of the community. The chief justice was what McCrady calls a "salaried and feed office." The Court of Common Pleas or the Supreme or General

Court was held at Charles Town and was presided over by the chief justice and his assistants; it could be held by the chief justice alone, or in his absence by not less than two of his assistants. The Court of General Sessions was for the trial of all offences punishable with death and "was presided over by the Chief Justice or in his absence by any two or more Assistant Justices."

In *The South Carolina Gazette* Saturday, November 24, 1739, we find the following notation:

On the Twelfth of last month, died the Honourable Robert Wright, Esquire, late Chief Justice of this Province, and the Court of General Session being to sit within a few Days after, his Honour the Lieutenant Governor was pleased to grant a special permission to Thomas Dale, Esquire; one of the Associate Judges, to hold the Court of General Sessions *Pro Hac Vice*, as a sufficient number of the Members of his Majesty's Council, would not on Account of the Late Sickness, be then assembled.

"Late Sickness" here referred to was the epidemic of smallpox, which had but recently come to an end.

Upon the death of Dr. Dale, 1750, the following notation appeared in *The South Carolina Gazette*;

September 17, 1750, Yesterday afternoon died, aged 50 years, Thomas Dale, Esq: esteemed a man of great virtues, abilities, and learning in general, and in his Profession of Physic in particular, in which he took his Doctors Degrees at Leyden in the year 1724 or 25: In his public Character (for he has been a Judge in the Supreme Court of the Province about 16 years past) he always acted with great integrity and Honour; and in his private Life exhibited a truly amiable character, being possessed of many Virtues, and Qualifications which

made him Valuable and agreeable to his Friends and Acquaintance, and without Envy, Malice or Resentment to his Enemies, for such, he, like many other good Men, undeservedly had; He was open, generous and free in his Sentiments; and from his great and extensive Reading had a great Fund to entertain in Conversation: He was a loving, tender and affectionate Husband, a kind Neighbor, a humane Master, and a sincere and hearty Friend, a lover of true Religion, and a Practiser of the Rules, and Precepts of it; and has died as sincerely lamented, by all who had the Happiness of an Intimate Acquaintance with him, as any Man ever did.

His will directed that his library and household goods be sold for the benefit of his estate and that his collection of dried plants and other specimens of natural history, be packed and sent to his friend, Dr. John Frederick Gronovius, at Leyden.

The following postscript appeared in *The South Carolina Gazette* January 7, 1751:

To be sold, all the personal estate of the late Doctor Dale, at his late dwelling house in Church Street; The sale to begin with his Library on tuesday the 22nd day of this instant January, at 4 o'clock in the afternoon precisely, and to continue every afternoon till all the said Library is sold, a catalogue of which may be seen at Mr. Garden's, Mrs. Floyd's and Mrs. Woolford's; And on thursday morning at 9 o'clock, the slaves, cattle and stock, among whom are several very valuable negroes; and the household goods, on tuesday the 29th inst., at which time everything will be sold, punctually to the hours and days mentioned. All persons indebted to the estate of the said Doct. Dale are desired forthwith to pay the same and all persons having any demands on the said estate, are desired to bring them to

Hannah Dale, Executrix.

(The writer is indebted to Dr. James L. Miller of Thomas, West Virginia for the loan of the silhouette of Dr. Thomas Dale, Jr. and to Mr. A. S. Salley, Jr., Secretary of the South Carolina Historical Society for his kindly advice and aid.)

BIBLIOGRAPHY

LAW, R. A. A Diversion for Colonial Gentlemen. *Texas Rev.*, 1: 1915-1916.
BASS, J. H. The History of Medicine. N. Y., 1889.

McCRADY, E. The History of South Carolina under the Royal Government. N. Y., 1901.

Dictionary of National Biography.

WHITNEY, E. L. Government of the Colony of South Carolina. Baltimore, Johns Hopkins Press, 1895.

WILLIS, E. The Charleston Stage in the XVIII Century. Columbia, S. C., 1924.

GARRISON, F. H. History of Medicine. Ed. 4, Phila., Saunders, 1929.

The Gentleman's Magazine, London, 6: 1736.



ANTONIO VALLISNERI

(MAY 3, 1661—JANUARY 18, 1730)

ON THE SECOND CENTENARY OF HIS DEATH
"MAXIMA PARVO TEMPORE MOLIMUR"

By JOSEPH FRANCHINI

MODENA, ITALY

ANTONIO VALLISNERI often related that one day when he was twenty-three years old, he was introduced by his father Lorenzo, a doctor-in-law, to Marcello Malpighi who was then ill in bed. The latter exclaimed in a tone which carried conviction, "There is no remedy for my illness." The studious young man who was as yet undecided as to whether to follow the career of his father and of his ancestors or whether to study medicine, was strangely struck by such a declaration coming from one of the most celebrated doctors of the time. Another less thoughtful mind would have been discouraged by the resigned exclamation of the Master, but Vallisneri on the contrary felt a growing desire within him to study medicine. So plucking up courage he asked his father if he had any objection to his taking up the study of medicine and he asked Malpighi if he would accept him as his pupil. In his young mind, where enthusiasm was the blind and masterful guide, there grew a keen desire to solve the mysteries of nature. This desire had led him in his youth to catch birds, frogs, lizards and serpents, and having skilfully dissected them, he placed their intestines on boards. But he was not always encouraged by his parents in this occupation.

The studies of that time were turned towards Aristotelian doctrine, a philosophy of words full of obscure and abstract reasoning, whereby the

phenomena of nature were explained in a clever but deceptive way, and the mind was encumbered with prejudices and confused ideas vaguely conceived by a few initiators.

Theologians, Jesuits and monks held the reins of teaching which consisted of dogmatic conceptions and it was impossible to escape from these doctrines without embracing a liberal or secular profession, in which prevailed the Burgundica philosophy, the Democritica or corpuscular theory, which gave a better explanation of natural phenomena. Such was the study of medicine in 1600.

The prospect of being guided by the great Malpighi who had given him such a hearty welcome was for the young Vallisneri an incentive to overcome all uncertainty, and a stimulus so keen that he immediately dedicated himself to his studies and to experiments in anatomy. He worked with such zeal that he fell ill, and gained at the same time reproach from Malpighi and the title of "Priore degli scolari."

Nobility, riches and caste, a rigorous upbringing and a respect for family traditions, made him a rigid observer of his own social duties. Among his ancestors, invested with titles of nobility and feudal rights, lords of Vallisnera and of innumerable lands and castles, were Giov. Maria, Governor of Cremona, a certain Antonio, Governor of Reggio, a certain Prospero, Abbot of Reggio, author

of some literary works; and in his time were still living Mauro, one of the Counts of Nigone, a Benedictine Abbot; his uncle Guiseppe, the doctor of the Princes of Este, and his father Lorenzo, Capitano di Ragione in Tresillico for the Duke of Modena. The favorable conditions of his family, his teachers and environment (Bologna) helped to produce good results in his scientific education.

He graduated at Reggio in 1634 in accordance with the edict of his sovereign, the Duke of Modena, who would not permit his subjects to graduate outside the jurisdiction of his dominions. He soon returned to Bologna to resume his studies in medicine and to perfect himself in practical medicine in hospitals, where he had Salani as a teacher. The rivalry between Sbaraglia and Malpighi which also generally involved the students, did not affect Vallisneri.

He nobly remained at his post as the devoted pupil of Malpighi, although he did not disdain to frequent the lessons of the eager adversary, who used his eloquence in his machinations against any follower of experimental theory, whether he was de Graaf or Malpighi. It must be added also that Vallisneri's behavior was always straight and honorable; for on leaving his teacher at the end of his studies, he received from him the most excellent advice which shows the loftiness of feeling of the writer, rather than the qualities of the disciple.

It is advisable never to write about theories and systems founded only on talent, because they are subject to changes under new discoveries and theories. Treat only results of observations and experiments which are always true in every age and endeavor to produce

new doctrines from them deducted with the greatest caution from evident facts. In considering the mysteries of nature,

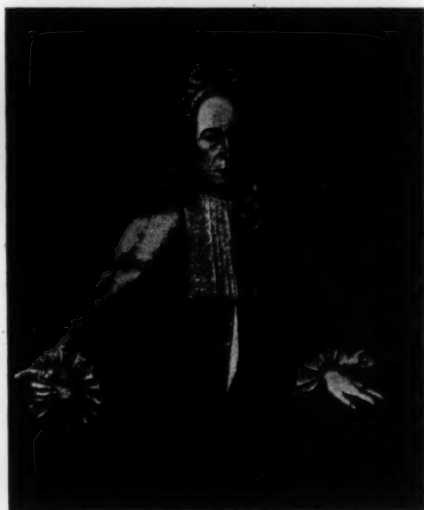


FIG. 1. ACQUERELLE PORTRAIT OF VALLISNERI TO BE SEEN IN THE SPALLANZANI MUSEUM IN REGGIO EMILIA.

use your own sense verifying with eyes and hands what others have declared in word and writing.

So Vallisneri wandered about for two years from one to the other of the most important Universities. He attended the courses of Florio in practical medicine at Venice, of Grandi in surgery, of Testi in chemistry and learned from the latter who was the discoverer of sugar of milk and other remedies, the art of making medicines. He desired to get instruction, for the purpose of comparison, in the ancient systems, and he therefore pursued the wonderful course of lessons (at Padua) given by Del Bo, who was a cultured and persuasive supporter of the ancient school of medicine. From there he went to Parma whither he was attracted by the renown of Pompeo Sacchi who had just published "Iris Februm" in which he

and learned men, all these had created a new art for solving the mysteries of nature. It was a high road illuminated

culuation of the blood, and attributed to the heart its muscular structure when the course of centuries had



FIG. 4. CHURCH OF THE HERMITS AT PADOVA WHERE IS TO BE SEEN THE TOMB OF VALLISNERI.

by sunshine and the only one adapted to lead the mind towards the lofty heights of Truth. Did not Seneca say "Nemo ab altero potest vinci nisi dum ascenditur." So it was folly to stop at the theories of the ancients, worthy of respect, it is true, because in them we find the beginning of things; but modern man with all his means of investigation faces the task of demonstrating these beliefs which we cannot destroy.

Hippocrates clearly understood the functions of transpiration even without seeing the cutaneous glands. In his description of the pulmonary "sponge" lies all the anatomy of the Malpighian vesicles. Ovulation in the mystery of generation was for the ancient father of medicine a fact which admitted of no doubt, nor had it appeared differently in the conception of Aristotle, Plutarch, Empedocles and Theophrastus and in the Egyptian hieroglyphics. Had not Hippocrates perhaps understood the cir-



FIG. 5. VALLISNERI'S TOMB.

not yet produced Malpighi, Harvey, Borelli and Bellini? Pleurisy had been seen and described by Enophil; Teophilus before de Graaf discovered the vascular and tubular substance of the testicle. Epheseus Rufo saw the tubes of the uterus before Faloppio Cosman localized the functions of the mind in the gray matter of the brain. And we owe to Hoffman the demonstration of the pancreatic duct which is usually called by the name of Virsung, and to Vesperus we owe the first description of the hepatic gland. "Mundo nihil extingui sed vicibus descendere atque resurgere," said Tacitus.

But very different from the prelude were his actual lessons, and one of the first things to be demolished was the theory "De Febribus" of Avicenna, with all the structure of his philosophic conceptions. It was in fact time to abandon the famous theory "sit calor extraneus accensus in corde et procedens ab eo mediantibus spiritu" and it was necessary to destroy the opinion that the stomach and intestines and other tissues were provided with glands while the "conglobate" served to absorb the excessive humid-

ity without any other function of their own.

Imagine the reaction of the philoso-



FIG. 6. VALLISNERI STREET IN SCANDIANO (REGGIO EMILIA).

phers of the time! New ideas were exposed to the light of experiments, but they contrasted horribly with the predominant conceptions of the school. Hence arose anger, libel, accusations and threats. A struggle of pigmies such as Malpighi had been engaged in at Messina and Bologna, a necessary training for one who must rise, and the crucial turning point in the history of great men.

And Vallisneri advanced against these rivals with lowered visor; he accepted battle, and repelling every attack, revealed the batteries of his experimental arguments. He found adherents and reformed the ancient University of Padua. Both from the chair and from his house, which was open to all students, he made himself the apostle of the new doctrines. Lessons and consultations in speech and writing filled the hours free from experiments; so that it was rightly said of him that he spent his time

depriving himself of sleep between one task and another. A publication of his "About sea fossils which are found on the mountains" written one summer in reply to a request from some of his friends about the state of the world before and after the flood, raised bitter criticism in France, where the Royal Academy of Science maintained that these sea fossils were of plastic origin if not mere freaks of nature. For his work on the generation of worms in the human body, he was unjustly attacked by the French Andry, who said many false things, and appropriating some of the discoveries of Vallisneri passed them on as his own, even pretending not to know the Italian scientist's name.

The criticism which arose against another publication in 1715 in the form of a letter "Academical Lessons" about the origin of fountains was just as harsh.

An anonymous person, who may have been the Florentine Nicolo Gualtieri, a doctor, printed a satirical pamphlet in which the eternal question of the springs was brought up in an imaginary discussion at Parnassus and submitted by Pliny, Aristotle, Seneca, Virgil and Ovid to the judgment of Apollo. The theory of atmospheric conglomeration maintained by Vallisneri was rejected in favor of the marine influence, with an invocation to God to keep away from Europe the great clouds and snows, which fed the rivers Paraguay and Amazon existing on earth, before any cloud or drop of rain appeared as declared by the Holy Scriptures. But the indomitable energy of Vallisneri was unshaken by such a small thing. The origin of springs had long been studied by him and elaborated in numerous excursions on the Modenese and Tus-

can Apennines, during one of which he was the guest of Prince Ferdinand of Tuscany who entertained him for a long time at his villa at Pratolino where there were many springs. From Leghorn he wished to cross over to Genoa but was wrecked after having gone a few miles. He resumed the voyage and visited the coast as far as Superba, and on his way there and on his return voyage, he visited the local scientific institutions, bringing home copious collections of plants, animals, minerals and fossils which he put into a Museum, where they were accurately put in order and classified together with the marine productions found on the Alps, in Germany, in France, in England, in Holland and even in the Congo. He later on added to them the most interesting and varied collection of rare objects, natural freaks, antique objects, medals, arms, vases, sepulchral urns of every country and of every age, scientific instruments and a valuable library. He gave a description of each object discovered, and he drew wise deductions.

In his book on "Marine Bodies" he describes the "Salsa di Sassuolo," the springs of Sasso, the salt springs of Querzola and Cassola and other mineral springs, and he ends with a catalogue of many plants and aquatic insects.

Then studying the stratification of the surface of the earth and the inclination of rocks, he found the origin of the springs and put forth the theory of the formation of sedimentary rocks in the bottom of the sea. Contradicting the theory of spontaneous generation he showed how each organism must be born from its own seed, "Omne vivum ex ovo."

Starting with the development of

the fly and the "Oestrus" of the horse, he followed up his researches on all insects and worms from the state of



FIG. 7. VALLISNERI'S HOUSE IN SCANDIANO (REGGIO EMILIA).

larva and chrysalis to their final stage of growth.

The complicated theory of the apologists for putrefaction which was considered to be the origin of insects and mice, the supporters of the theory of perfect and imperfect beings received a terrible blow from Vallisneri, who discovered with marvelous rapidity of intuition individualizations as yet unknown, with their respective cycles of development, from the mildew of corn to the ant worm, to the cucullinum sputum, the butterfly of the Siloptero, the parasites of the willow and of many other plants, the mud nests of wasps, of the ichneumon fly and of wild bees. He discovered their larvae in their strange recesses of mud, of wood, of putrefying sub-

stances, wherever the ingenious mother had deposited them. many of these animals which he had caught in Tunis. The life and habits

All the clever conjectures on butter- of the chameleon carried him into the



FIG. 8. VALLISNERI'S VILLA NEAR SCANDIANO (REGGIO EMILIA).

flies contained in a French work at that time and very much quoted, "Entretiens de morale," were revealed as a fantastic romance.

Since the bitter criticism aroused by so many new theories did not cease, Vallisneri published a new treatise on the origin, development and habits of various insects in 1713. In this work he speaks of the insects of the rose bush and of other parasites of plants. He passes on to a general division and description of insects, the birth of the flea from the egg, the origin of the seeds of seaweed, to the life of the fly, and of the worm which lodges in the nose and frontal sinus of the sheep, and of other animals, and he ends with a very careful "Anatomy of the Ostrich." In 1715 he published the "History of the African Chameleon" describing many parts of this animal which had escaped the attention of members of the Royal Academy of Science of France. His friend Cestoni of Leghorn procured for him a great

vast field of lizards, frogs, toads, and he soon proved the fallacy of the legends about their poisonous origin and their manner of reproduction. And since in the biologist appeared the genius of the doctor, it is not difficult to follow the rapid progress from one scientific truth to another and to accompany the discoverer in his study of the lues of the ox, of the pestilential worm, of the poison of the scorpion, of the juice of American aloes, of a description of a calf-monster, and of other freaks, of the ovary of the eel, of the bladder stone of the horse, of the flowers of "Lenticula palustris." He further studied human worms, the tape worm, lice infection, the fermentation of wine to form vinegar, with great facility passing from one argument to another still more difficult and more complicated, in anatomy, physiology and biochemistry.

Vallisneri, who was then a member of the Academy of the Investigators of Germany, dedicated to Charles VI, the Roman Emperor, his wonderful

volume of "History of Generation" in which he passes from the sperm and human ovary to those of animals, analyzing all that had been previously discovered and discussing this with the members of the French Academy, also describing his long series of experiments. The volume ends with a treatise on sterility, of which he indicates the cause and the remedy. The connection between all created things, the sole origin and the only possible system of the evolution of species, are illustrated with an amazing clearness considering the time in which they were written, the number of the experiments, and rapidity with which they were done.

He dedicated his book "About sea fossils which are found in the mountains" to the Contessa Clelia Grillo Borromeo. It is our duty to say a few words here about this beautiful and energetic scientific woman who was both supporter and devoted friend to Vallisneri.

She was born of the Genoese family of Dukes of Grillo, and married a certain Count Borromeo, a man of little worth, but of a noble Milanese family, from which had risen St. Carlo and Cardinal Federigo. This gentlewoman had nobility, beauty, wealth and vast culture. She was familiar with the various natural sciences and spoke many languages in addition to the purest Italian. She conversed brilliantly in French, Spanish, German, Arabic, Hebrew, Chinese, Greek and Latin. It is not to be wondered that she welcomed to her salon the greatest men to discuss the most varied subjects in literature and science. Experiments on the poison of the viper, lessons on supposed monstrosities, discussions about a woman with a double womb

and about another who had swallowed needles, alternated with madrigals and political questions, and caused



FIG. 9. CHRISTENING TROUSSEAU OF VALLISNERI (ORIGINAL) IN THE SPALLANZANI MUSEUM OF REGGIO EMILIA.

her house to be both sought out and avoided at the same time.

Vallisneri was infatuated with this woman and although in the letters he wrote her, we see a sentiment of pure admiration and gratitude for her kind hospitality, everything inclines us to believe that his feelings were of a different kind.

Vallisneri married a certain Laura of the noble family of Mattacodi and found in her a model wife, by whom he had eighteen children. One of these named Antonio, like himself, was well versed in biology and became the natural follower of his father and made a collection of his works. But Laura lacked the fascination of the vivacious Countess, who lured him by repeated invitations to accept her hospitality and overwhelmed him with kindness and gifts, not the least of which was her miniature in a frame set with diamonds inscribed with

the motto by Giovanale, "*Irridens curas et gaudia vulgi.*" Vallisneri describes her as an honorable woman,

rocal expressions of praise and sympathy would have caused a Puritan to disapprove and he would not have



FIG. 10. BRONZE MEDAL IN HONOR OF VALLISNERI MADE BY SELVI. (CIVIC MUSEUM AT PADOVA.)

an exemplary mother, and so modest as to declare that she knew nothing although she so cleverly discussed geometry, analytics and algebra; a woman who was kind-hearted, rich, of noble, modest and grave appearance, charming and beautiful, very witty and vivacious. He says that she was of "average height but proportionately built, disdainful of the vanities of women, virtuously superior to all worldliness, interested only in culture and learning." Such is the appreciation which he wrote to his friend Doctor Giorgi of Florence, and from it, laying aside the bombastic style and praise which are characteristic of the time, emerge expressions which far exceed simple admiration.

It was the wonderful seventeenth century, an epoch full of frivolity and marked courtesy. Receptions, balls and madrigals brought ladies and cavaliers together, without husbands having the slightest reason for raising objections. In another age those recip-

forgiven a lady, the mother of six children, for using in addressing a learned man such phrases as "dear philosopher," "consolation inspired by your most partial heart," "philosopher not only of my mind, but of my heart," etc. Although much younger than she, Vallisneri died forty-seven years before Donna Clelia. She plunged into anti-Austrian politics in favor of the Spaniards who reminded her of her distant origin and she suffered every kind of persecution at the hands of the Empress M. Teresa. Her salon was closed by sovereign orders, because of family adversity, and the fact that her friends had fled. Deprived of her riches, she spent the last years of her very long life, for she reached the age of ninety-three, in poverty. She wandered about always working against the hateful domination, more out of feminine obstinacy than out of patriotism.

The Spanish occupation which was

full of haughty pride and disdain for the oppressed, was no less detestable than the tyranny of Hobkowitz, lieutenant at Milan of His Majesty Imperiale Cattolica.

The publications of Vallisneri on biology and medicine may be counted by the hundred in all the periodicals of the time. Among his principal works are those written on the verminous constitution of horses and oxen, pestilential worms in general, the use and abuse of beverages, of warm and cold baths, experiments on splenectomy, digestion produced by hydrochloric acid, the use of quinine, blood-letting, discussions on legal medicine, blistering, epilepsy, questions of pathologic and histologic anatomy. Other publications contained a detailed study of an acephalous fetus, of twins joined together by their abdomen, of an ox's brain which had petrified and which was diagnosed by Vallisneri as a cerebral osteoma, works treating of esophageal stenosis, of the continuous vomiting of pregnancy, of ascites, of cerebral abscess, of the composition of the urine, of menstruation, etc.

All these works brought him reputation and esteem. His "Medical Advices" were very much appreciated and in every book or publication of the time, not only in Italy but also abroad, appeared dedications, observations, letters and discussions addressed to Vallisneri, who in the meantime was appointed a member of numerous societies, of the Academies of the Physiocrats of Siena, of the Investigators of Germany, of the Societies of Florence and Rossano, of the Royal Society of London (presented by William Corlibun and his secretary Sloan), of the Institute of Science of Bologna, of the Arcadi of Rome, of

the Arconti of Italy, of the Ricoverati of Padua, of the Dumb of Reggio, of the Nameless of Bra, etc.

In 1720 in place of Lancisi he was appointed Archiater to the Pope, a very high position which he declined, so as not to abandon his teaching at Padua, as he had declined the post of Doctor to the Court of Savoy in Turin. On the other hand he accepted the post of Doctor of the Emperor Charles VI to whom he dedicated "The History of Generation" and from whom he received the gift of a rich necklace of gold with medallions. Rinaldo I, Duke of Modena, conferred on him the title of Cavaliere, transmissible to his sons. Such honors hardly affected him and, far from making him proud, seemed rather to inspire him to become more and more kind and affable, so that he replied with his own hand to an enormous quantity of letters, a great part of which were of a scientific nature or medical consultations, very many of them also complimentary letters; and at the same time, he visited the pious Cardinal Barbarino of Padua and with him he retired in solitude for religious meditation.

The love which he lavished on his friends was an exquisite sentiment which had a certain deep fatherly tenderness and was extended to everybody. He was a fervent patriot at a time when it was customary to write scientific works in Latin and he hastened to point out that a patriotic Italian must be able to write in the purest style, the language of Dante, and for this reason he preferred to write his own works in Italian.

Being an excellent father he personally took charge of the education of his children, and we have already told how Antonio profited by this.

being the only son who survived him, for he lost many of his children. In honor of the memory of his uncle, a doctor who had left him a considerable fortune, he paid for the education of four young boys of Scandiano, supervising their education. It is not out of place to remember that Florence wished to present him, while he still lived, with a medallion on one side of which, among innumerable allegorical figures, conspicuously appeared a motto of Tertuliano, "De anima tantum in modicis quantum in maximis." Death came to him as it has come to many other elect minds, while in the full development of his activity. He left many of his works uncompleted.

On January 18, 1730, he peacefully passed away, well aware of his illness, which was a pulmonary infection,

which he had caught five days previously. To the doctors gathered in consultation around him, he exclaimed with Socratic wisdom, "pulsus bonus, urina bona pereunt patientes."

He was sixty-eight years and eight months, and he left the world resigned but discontented at his immature end as we gather from the following words written by him to the Abbot Di Porzia who wrote his biography after his death. "Our life is too short and it ends when in our prime we really begin to know a little."

When the news of his death was brought to the great Antonio Muratori he was heard to exclaim, "How long will it take to produce such another as Vallisneri" and he was right, since it is not so easily said of another as it was written of Vallisneri senior, "maxima parvo tempore molimur."



[From Redi: Sonetti. Firenze, 1702.]

THE MÜTTER MUSEUM
OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA
By H. P. SCHENCK, M.D., CURATOR

PHILADELPHIA, PA.

AT the time of his retirement from the faculty of Jefferson Medical College in 1856, Thomas Dent Mütter had completed an unique and valuable collection of anatomical and pathological specimens. Having occupied the Professorship of Surgery from 1841 to 1856, he had thrown his enthusiasm and energy into teaching and collecting while others were writing and contributing to current medical literature. His popularity as a teacher made of him an impressive and inspiring figure to the young men of his generation. The success of his collecting propensities is attested by the survival of the museum which bears his name.

In December, 1858, three months before his death, Dr. Mütter signed an agreement with the College of Physicians of Philadelphia, to turn over his collection if the College would house the collection in a fire-proof building. The collection sent from the Jefferson Medical College¹ to the new building of the College of Physicians in 1863 contained: 474 bones, 215 wet preparations, 200 casts, 20 wax preparations, 8 papier-mache models, 5 dried preparations and 4 oil and 376 water color paintings.

With this nucleus, the collections of the Mütter Museum have grown through a period of sixty-five years. With the assurance of permanence, the museum became the depository of exhibits of considerable historical importance. From the days of Morgan, Rush and Shippen came the quaint drug boxes with their lacquer, as fresh today as when they saw service. Here

may be viewed the vesicle calculus removed from the Chief Justice, John Marshall, by Dr. Physick. With the beginnings of aseptic surgery, the curious carbolic atomizers of Lord Lister came into being and a goodly number of these, once the property of surgical pioneers, repose side by side with Lord Lister's own model. Finally, the modern period is represented by the Chevalier Jackson Collection of foreign bodies, some twenty-five hundred in number.

For the student of instruments there is a wealth of material. He may linger over the Pompeian surgical collection or admire the delicate workmanship of the instruments of Ambrose Paré. The latter probably represent the high-water mark of art in the manufacture of surgical instruments. Then there are disappearing breeds of devices, such as those once used for boring holes in vesical calculi and thus weakening them before crushing. Here we may study a method advocated by Gruithuisen of Munich and Elder-ton of Scotland about 1760.

A chest of polished wood, containing an array of surgical instruments, carefully chosen and disposed with the utmost conservation of space, revives memories of the Philadelphia physician, Elisha Kent Kane.² His name was for years a spur to other adventurous spirits who attempted to penetrate the northern wastes and is enshrined among the names of the greatest explorers of the nineteenth century.

Although he had attracted consider-

able attention by his physiological researches soon after graduation, Dr. Kane shortly transferred his enthusi-

in various parts of the country. The ship *Advance* reached the upper part of Hudson Bay in 1853. At the

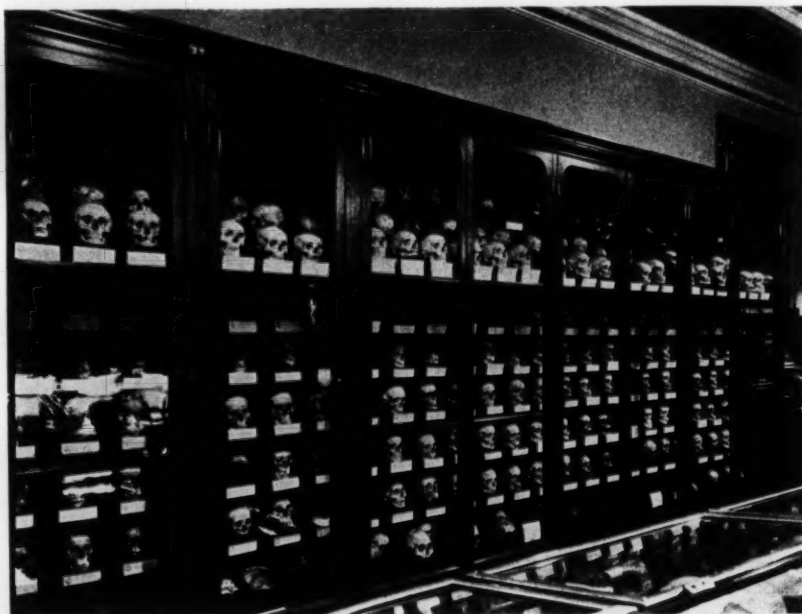


FIG. 1. THE HYRTL COLLECTION.

asm to travel and exploration. To further his aims, he became a surgeon in the United States Navy in 1843. The surgical chest we are considering was designed and equipped by him when he became surgeon of the First Grinnell Expedition in search of Sir John Franklin and his men who were lost in the Arctic. For nine months the boats were icebound and after sixteen months in the polar area Dr. Kane returned to the United States broken in health but determined to organize another expedition and resume the search.

The Second Grinnell Expedition, which Dr. Kane commanded, was financed by the publication of his account of the First Grinnell Expedition and by the receipts of his lectures

head of Baffin Bay, they passed through Smith Sound and reached Kane Basin, an enclosed sea which was named for the explorer. This remained the established route for access to the North for many years and was the one chosen by Peary when he discovered the North Pole in 1909. Sir John Franklin and his men were not found but in June 1854 the expedition reached 80 degrees, 35 minutes and this point remained the farthest north for sixteen years. This chest not only accompanied the explorers to this latitude but was brought back with them intact after a desperate struggle which almost cost them their lives. The ship was abandoned and in August, 1855 they reached an

outpost and returned home to find themselves national heroes.

Dr. Kane died in Havana in 1857,

workers faced. Since the time of the Roman Emperors, no living hippopotamus had come to Europe. The

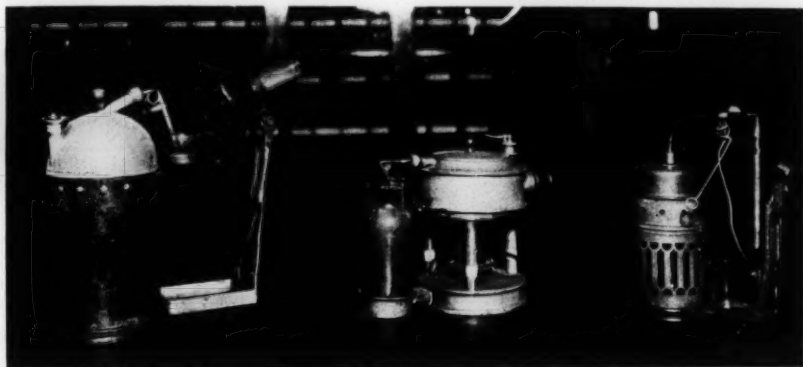


FIG. 2. CARBOLIC ATOMIZERS. THE CENTRAL ONE BELONGED TO LORD LISTER.

having sacrificed his life in the cause of his scientific endeavors, at the early age of thirty-seven years.

Of a later period are the Civil War instruments and as methods changed and technic progressed, we trace the transition into the equipment of the World War.

In the field of ethnology, the collection of skulls of all races, brought together by Hyrtl of Vienna, holds much of interest. The museum also contains Hyrtl's famous preparations of the labyrinths of the ear of man at different periods of life as well as those of all mammalian families. These, together with the ossicles, required fourteen years for preparation and were first exhibited at the World's Exposition in Vienna in 1873. Hyrtl's difficulties were somewhat minimized by the zealous cooperation of Professor Ducrotay de Blauville, who secured for him the temporal bones of the elephant, rhinoceros, hippopotamus, otaria jubata, physeter, tipuis and orca.

An amusing incident may emphasize some of the difficulties these

anatomy of the internal organs of this animal remained unknown. Between 1830 and 1840, the French Government sent Monsieur Arnould d'Abbadie as ambassador to the King of Seboa. The Academy of Paris added to his instructions the request to transmit in a preserving fluid the body of a young hippopotamus.

The ambassador discharged this undiplomatic duty with great tact. The King was afflicted with "rheumatism of the joints" and requested the ambassador to help him for, in the Orient, all Franks were thought to be masters of the art of healing. Monsieur d'Abbadie enthusiastically agreed to help.

Procure the medicine. I'll give my crown if I shall become well again.

Not at all necessary; the medicine is found in your own land; it is the fat of a hippopotamus.

Bring a hippopotamus, [the King ordered his henchmen].

Gently, you must not go so fast. It must be the fat of a pregnant female.

Parties of hunters were immediately sent into the savannahs and

one of them actually brought in a pregnant female. D'Abbadie smeared the limbs of the King with its fat and

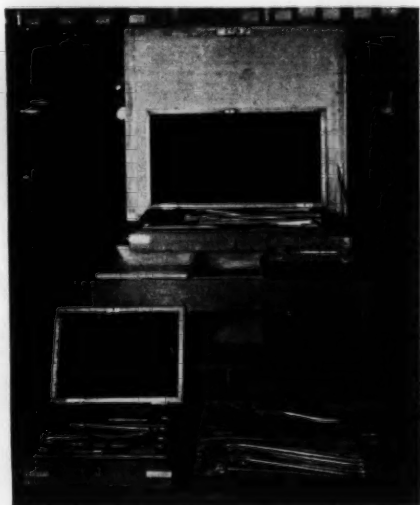


FIG. 3. THE KANE ARCTIC CHEST.

he recovered from his pains. The fetus was pickled and sent to the Jardin des Plantes, where Blauville allowed Professor Hyrtl to take out the petrous portion of the temporal bone and replace it with a plaster cast.

The normal and abnormal relations of the vessels of the human placenta were first shown by Hyrtl by means of unexcelled corrosion preparations, which form another exhibit. The corrosion method of demonstrating the circulation in various organs was next developed by Hyrtl and his large collection of such specimens are here displayed in as excellent a condition as they were more than fifty years ago.

At the most critical point of the nation's financial situation in 1893, it was discovered that President Cleveland would require an immediate serious surgical operation.³ Dr. R. M. O'Reilly, later Surgeon-General

of the United States, had examined Mr. Cleveland on June 18, 1893 and had found a rough spot as large as a quarter dollar on the roof of the mouth, extending from the bicuspid teeth to within one-third of an inch of the soft palate. There was some diseased bone and a pathologist pronounced a biopsy specimen malignant. This diagnosis was confirmed by Dr. Joseph D. Bryant, Cleveland's personal physician and friend, and immediate operation advised.

Speed and complete secrecy were imperative because of the serious political consequences which would be precipitated by any news of the operation. The President decided upon July 1 as the date, and on June 30 courageously set August 7 for a session of Congress to vote upon the Repeal Bill. Commodore Benedict's yacht was selected for the operation and a secret consultation between Bryant and Keen was held June 30 on the deserted deck of a Fall River Boat tied at her dock in New York.

The following day, a final examination of the President was made aboard the *Oneida* and two upper bicuspid teeth were extracted under nitrous oxide anesthesia. The first incisions in the roof of the mouth were made by Dr. Bryant and then a change was made to ether while the pulse and general condition were closely followed by Dr. Janeway. Practically the entire left upper jaw was then removed, scrupulously avoiding eye injury and facial scarring in order that the operation might not be betrayed.

On July 5 (four days after operation) "the President walked from the launch to his residence [Gray Gables] with but little apparent effort." The appearance of the wound

at one point was questionable, however, and on July 17 the suspicious tissue was completely removed and the electrocautery applied. Between operations, Dr. Kasson C. Gibson had fitted an artificial jaw of vulcanized rubber. This prevented visible deformity and supported the tissues perfectly. When this was in place, the President's speech was normal, with no alteration of quality.

On August 7, 1893, the date courageously chosen by Cleveland, Congress met in special session and after stormy oratory repealed the Sherman Act. On October 26, 1893, the Nation said: "To Mr. Cleveland—and we might say, to Mr. Cleveland alone—belongs the honor of securing the passage of the Repeal Bill."

Mr. Cleveland died June 24, 1908, fifteen years after the removal of a sarcoma of the jaw. There had been no recurrence. The successful maintenance of profound secrecy was as remarkable as the surgical success. Dr. Keen in his report remarks, "What the consequences would have been had it become known at once we can only surmise and shudder."

This historic specimen, together with the instruments used by these surgeons, is preserved in the Mütter Museum, through the efforts of Dr. W. W. Keen, one of the men who carried this state secret through a period when its safety was vital to the nation's welfare.

During the last century the term "Siamese Twins" became a household expression, largely through the genius of Barnum. The original Siamese twins, Eng and Chang, were born in Siam of Chinese parents. They were exhibited in practically every civilized country. Brought to this country they settled in Mount Airy, North

Carolina, where they died January 17, 1874, at the age of 63. They married sisters. Chang had six children



FIG. 4. THE SIAMESE TWINS.

and Eng five, all normal. Because of frequent family quarrels they had to agree to allow each to live with his wife a week, alternating week after week.

A commission appointed by the College of Physicians of Philadelphia performed the autopsy. The livers with their connecting vessels are well preserved in the Mütter Museum and casts of the twins made after the autopsy are exhibited under glass. The chair upon which they were wont to sit when exhibited is nearby. Many mementoes of the pair have been deposited here including a scrap book containing handbills and advertisements from the world over which was the property of Sir William Osler.

Elsewhere, may be traced the development of the obstetrical forceps. The diversity of types is appalling. Instruments of foreign and domestic

manufacture may be compared as well as the rarer ones forged by the village blacksmith. The history of stethoscope manufacture is represented from the days of Laennec to the present. The stethoscope in the World War is not neglected for this humble instrument of the clinician served its bit during the early period of the war when it was used to detect enemy submarines by placing it against the hull of the vessel. After numerous seamen had lost their tympanic membranes during depth bomb explosions, the instrument was modified and today the device is largely the outgrowth of radio construction. Nevertheless, the stethoscope was the first instrument which met the needs of the navies.

The Matthew M. Cryer Collection represents a lifetime of collecting on the part of a physician interested in dental and sinus abnormalities. Autopsy and dissecting rooms were combed for material with the result that rare conditions are represented by multiple specimens. For the anatomist and clinician, this collection is unusually comprehensive.

Probably the most interesting of the recent acquisitions is the Chevalier Jackson Collection of foreign bodies.

By the use of a novel filing system, each specimen is accessible for study while protected by glass frames. The clinical histories and roentgenograms are available for study as long as this branch of medical science is of importance to physician and student.

Situated in a city possessing five medical schools, the Mütter Museum is performing a service of considerable value. It brings to the student the dignity and inspiration of the past masters of the healing art. Medical history in a graphic form is best fostered by such museums and a central depository for rare teaching specimens is of value to all. By progressiveness and vision, the successors of Mütter have built better than they knew. The museum is not only a heritage from the past but a mirror of present trends in medicine and its specialties.

REFERENCES

1. GIBBON, J. H. Thomas Dent Mütter. *ANN. M. HIST.*, 7: 237-241, 1925.
2. KANE, E. K. *Arctic Exploration*. Ed. by Horace Kephart. N. Y., Macmillan, 1926.
3. KEEN, W. W. *The Surgical Operations on President Cleveland and Six Other Papers of Reminiscences*. Phila., Saunders, 1928.



THE PHYSICIAN OF THE DANCE OF DEATH

By ALDRED SCOTT WARTHIN, M.D., PH.D., LL.D.

ANN ARBOR, MICHIGAN

PART IV*

THE IMITATORS OF HOLBEIN

WITHIN a very few years after its appearance, Holbein's "Grosse Totentanz" was reproduced, copied, and imitated in numerous editions, and so spread throughout the world. Everywhere it excited admiration and wonder for the strength and clarity of its artistic vision and the realistic force of its symbolism. But this masterpiece had attained such a degree of perfection that the artists who came after Holbein were unable to create or develop new and original treatments of the old theme. Holbein had completely secularized the medieval dance of death mythus, so that it had lost forever its old religious significance. For the remainder of the sixteenth century, and throughout the seventeenth and eighteenth, all artists who attempted this motive took their inspiration wholly from Holbein, and were unable to strike out for themselves along any new line of treatment, either as far as style or naturalism was concerned, or to invent new motives. It was the period of the "little artists," who could only imitate Holbein's general manner of treatment of the old theme, but who lacked individual creative power and imagination. All attempts to restore the dance of death to its ancient position of religious-didactic influence fell flat because of the overwhelming success of Holbein's wholly

secular treatment, which led to a widespread change of psychology in the mass of people accessible to influence by art. This was strikingly shown in France. Up to the time of the appearance of the Holbein cuts there had appeared in France twenty-two editions of the *Danse Macabre* and more than eighty editions of the *Books of Hours* having dance of death borders derived from the latter. Interest in the Holbein masterpiece replaced the old religious interest in the *Danse*, so that from this time on editions of the latter appeared only at widely spaced intervals. Holbein's art was henceforth the high point of interest in the Dance of Death motive; all that preceded it now acquired a purely historical interest.

The art productions of the imitators of Holbein varied from mere slavish copies of his dance of death, with slight changes, usually not improvements on the original, with one or several new subjects introduced, to series in which the only originality consisted in the replacing of Holbein's *dramatis personae* with an entirely new set of actors presented in a Holbeinesque manner. The technical ability shown in some of the imitations was excellent, in a few very effective; in some the skill of the artist was devoted to the adornment of the plates with rich ornamental borders, thus detracting from the forcible impression of the originals enclosed in simple fillet borders. Those who attempted to combine the medieval

*Parts I-III appeared in Volume II (1930) of *ANNALS OF MEDICAL HISTORY*: Part I, July, p. 351; Part II, Sept., p. 453; Part III, Nov., p. 697.

spirit with Holbein's style were particularly unfortunate, their results being characterized by pedantic stiff-

All of these used the Holbein woodcuts as their model. We cannot but wonder at the number of the artists

Der Arget.



FIG. 29. DEATH AND THE PHYSICIAN. JOBST DENECKER, 1544.

ness or by over-sentimentality. As in the book illustration following Holbein, so it was in the case of the few wall-paintings produced after his time, as those at Chur (1543), Constance (1558), Lucerne (1610; 1626-1635), Füssen (early 17th century), Wolgast (17th century), Kuckucksbad (18th century), Freiburg (18th century), Erfurt (1736), and Elbigenalp (1820).

who busied themselves with such imitations during the centuries following Holbein. It speaks volumes for the deep impression made upon the mind of man by his masterpiece, as well as for the vitality of the ancient theme.

As early as 1544 Jobst Denecker printed in Augsburg an edition of 42 woodcuts, 40 of which were after

Holbein, the other two original ones taken bodily from the latter are being the celebrated plate of the Adulterer and that of the Crucifixion. They are reproduced as large full-page

Der Arget.



FIG. 30. DEATH AND THE PHYSICIAN. DAVID DENECKER, 1561.

It bears the colophon "Gedruckt inn der Kaiserlichen Reychstatt Augspurg durch Jobst Denecker Formschneider." On the title-page is the date MDXLIII. It was entitled simply "Todtentanz." On the bed of the Duchess in the thirty-second plate is the date 1542, replacing the monogram HL of the Holbein plate. It is evident that Denecker copied the 1530 edition of Holbein issued at Basel. The plates

woodcuts in bold, spirited, sometimes rather coarse, style, suggesting that of the German book-illustrations. All of the delicate charm of the original is lost; but, nevertheless these cuts have a force and attraction all their own. On the page opposite each engraving is the dialogue between death and his vis-à-vis, and at the bottom a Latin hexameter. In general, the details of the Holbein cuts are faithfully

copied; the chief differences are to be found in the features of the personages, which are much altered

the handle of the sword. It appears that even in the sixteenth century the boldness of this representation



FIG. 31. DEATH AND THE PHYSICIAN. FABIO GLISSENTI, 1600. ON THE LEFT IS VALGRISI'S REPRODUCTION OF THE HOLBEIN; ON THE RIGHT AN ORIGINAL WOODCUT OF GLISSENTI, REPRESENTING DEATH IN THE ACT OF GIVING A CLYSTER.

in the Denecker plates. Each cut has a heavy black line as border, instead of the double-line fillet border of the Holbein plates. The upper border of the cut of the Physician is broken in several places. Special interest attaches to this edition of Denecker because of the plate of the Adulterer which is found in none of the Lyons, Cologne, or Venice editions of Holbein. It is not known that Holbein ever designed a plate of this subject, so that it is generally assumed that it is original with Denecker. The plate represents the guilty wife and her paramour in bed, caught in the act by the outraged husband, who is pushing his sword through the bodies of the pair. Death assists him, holding the head of the wife in his right hand, while with his left he pushes upon

led to scandal, for there is in existence another edition with woodcuts engraved by the same hand and with the same background, in which the adulterous couple is represented, instead of lying in bed, as sitting before the bed, with arms intertwined. Two other editions by Jobst Denecker are known. One bears neither name, place, nor date, but has the same cuts, that of the Adulterer bearing the mark of Jobst Denecker. The third edition has 40 cuts only, without title or date, and a different text. The cut of the Adulterer has Jobst Denecker's mark as in the preceding. Denecker's physician is a faithful enlargement of the Holbein cut, except that it is reversed and shows marked differences in the features of the physician and patient (see Fig. 29). The former

has a facial type suggesting somewhat the Jewish.

The Denecker family appears to

Necker. Formschneider." This contained also 42 woodcuts, but apparently not that of the Adulterer.



FIG. 32. DEATH AND THE ANATOMICAL LECTURE. F. GLISSENTI, 1609.

have been one of printers and engravers, wandering from city to city as did Holbein, and possessing establishments in Leipzig, Augsburg, Vienne, and Saint-Gall. In 1561, David Denecker, either a brother or a son of Jobst, produced a "Todtentanz" with 42 woodcuts, having the colophon "Getruckt inn der loblichen Reichstatt Augspurg—durch Davidt Denecker—Formschneyder." The title-page is dated MDLXI. The plate of the Adulterer is lacking. In 1572, there was brought out in Leipzig an edition of a "Todtentanz durch alle stende der Menschen," by "David De

He is said to have brought out another edition in Leipzig, differing in some minor details from the preceding. In 1581, a "Totentanz, Durch alle Stendt der Menschen," was printed in St. Gallen by Leonhart Straub, with 40 cuts of Denecker. This edition was incorrectly cited by Dibdin as having been copies on copper of the Holbein engravings. The title was printed partly in red. The Adulterer print is lacking. In the copy of the Augsburg edition of David Denecker, owned by the author, there are but 38 cuts, and they are brilliantly colored with heavy washes in a variety

of shades, after the manner of the early German woodcut illustrations. In the print of the Physician (see Fig. 30), the cap and robe of the doctor are of a reddish maroon, the fur collar is brownish, and his under robe is green. He sits on a blue cushion. The patient's quilted hood is gray, his cloak blue, lined with brown, his gown a sort of violet brown. His stockings are green. The tiles of the floor are varicolored, and the books on the shelf are bound in bright colors. His dog is white with patches of gray. This coloring of the prints has been done by a fairly skilled hand. In very few instances do the colors overlap. Aside from the colors, the cuts seem to have been printed from the same blocks as those used by Jobst Denecker in his 1544 edition. The same defects appear in the upper border of the block of the Physician as in that edition. The text shows, however, various typographical differences and variations in spelling. That accompanying the print of the Physician in both Jobst's and David's editions is the same, save for slight orthographical variations.

Der Tod:

Jetzt sieht man Doctor das dein kunst
Weit fählt—und ist genn mir umb sunst
Dann wa die stund verhanden ist
Hast du das leben nie gefrist
Kain augenblick—das ist wol schein
Und in der not kain hilff nit thon
Nimbst doch von andern leüten lon.

Artzet:

Wiewohl ich manchem gholffen hab
Der ainer krankhait kommen ab
Und lebt noch—der sunst leg im grab
So sich ich doch das Kain Artzney
Noch Kraut und Wurtz gewachsen sey
Die mir der letzten stund befrey
Weyl dann mein kunst kain rath nit waisst
Will stellen ich zu Gott mein trost
Und im beuelhen meinen Gaist.

David Denecker was followed at Vienne by one Hercule de Necker, who was also a wood engraver. In 1579 he published at Vienne an album representing the ten ages of man followed by death. These woodcuts were executed with much nicety of technic, and achieved much popularity. They were probably the first of a species of publication, representing the ages of human life, that later became very popular in France and Germany, and were used by both the Catholic and Lutheran churches for religious propaganda.

From 1557 to 1575 a number of editions of the "*Der Todten-Danz, durch alle Stend und Geschlecht der Menschen*" were published at Cologne and one in Nuremberg in 1560 by Casper Scheyt. He copied the 53 cuts after Holbein from the Birckmann editions, but used a German text, whereas all of the Birckmann editions had a Latin text. Many of the impressions of these inferior woodcuts are poor. They are all coarsely executed. In 1590, in a work entitled "*Libellus Davidis Chytraei de morte et vita aeterna*," published at Witebergae, by Matthaeo Welack, 53 of the Holbein series are reproduced in coarsely engraved woodcuts, but fairly faithful to the originals. The two devils in the cut of the Pope are omitted, as is also the demon blowing with a bellows into the ear of the Counsellor. Several different printers' marks are found upon some of these engravings.

In a very curious Italian work entitled "*Discorsi Morali dell' eccell. Sig. Fabio Glissenti contra il dispiacer del morire. Delto athanatophilia*. In Venetia, appresso Bartolameo de gli Alberti. MDCIX," twenty-four of Valgrisi's reproductions of Holbein's

wood
othe
toge

FIG. 31

imita
300
upon
the a
sible
hum
dialo
Each
of th
of t

woodcuts are introduced with five with funeral emblems. The cuts, all others taken from the Simolachre of which contain a skeletonized or together with many new subjects mummified figure, are repeated over



FIG. 33. DEATH AND THE PHYSICIAN. REPRODUCTION OF THE HOLBEIN IN COPPER-PLATE, WITH FLORAL BORDER. JOHANN VOGEL, 1648.

imitated in the Holbein manner, over 300 in all. These woodcuts all bear upon the subject of death, which the author discusses from every possible angle. It is a sort of tragedy of human life. The work consists of five dialogues and a *brevissimo trattato*. Each of these is preceded by a portrait of the author. These portraits, as all of the other plates, are decorated

and over again, most of them in each section of the work. Some of the Holbein subjects are very poorly imitated. The devils are omitted from the cut of the Pope. The prints bearing upon medical subjects are especially interesting to us, as Glissenti is said to have been a physician himself. At any rate his writings proclaim him a highly religious man, philosophical

rather than scientific. Holbein's cut of the Physician is repeated several times, always with a companion pic-

repulsive features of the dead body. Behind the lips so beautiful are decayed teeth and a foul odor issues

26. ^{ss} *Arzt.*



Doctor.
*Hier Doctor dem berühmte Kunst
 Dem Todt zu wehren ist ymbt
 Kann Kunst nach Wunden dinsten verdirbt
 Erhalt das Leben das nicht stirbt.*

FIG. 34. DEATH AND THE PHYSICIAN. ORIGINAL ADAPTATION OF HOLBEIN, BY CONRAD MEYERS, 1650.

ture of Death in the act of preparing to administer a clyster to a patient who has risen from his bed and kneels upon the floor (see Fig. 31). In another print an anatomist is in the midst of an autopsy, while Death addresses forcibly the foremost of a group of young medical students crowding in to view the anatomizing of the body of a young woman. From the text we gather that this is the anatomical theater at Padua (see Fig. 32). The body is that of a celebrated beauty. Death points out the

from the mouth. The parts of the body formed for love in life are in the dead body horrible and repulsive through putrefaction. Death is attempting to so horrify and disgust the young student that he will no longer desire to live, but will give himself to death. The end of this tale is that the student decided to abandon the practice of medicine and to live upon the income left him by his parents. One would like to know what the author had in his mind as to many of these cuts; but, the mass of text

is too formidable for one to make the attempt at translation, particularly as it appears on the surface to consist

in Frankfort a "Todten Dantz durch alle stände und Geschlecht der Menschen," with frontispiece and 60 cop-



FIG. 35. DEATH AND THE PHYSICIAN. WENCESLAUS HOLLAR, WITH BORDER BY DIEPENBEEKE. FROM THE "MORTALIUM NOBILITAS," LONDON, 1651.

chiefly of arid religious moralizations and philosophizing. So it is more profitable to take the pictures at their face value. They are interesting and curious enough to repay a careful examination. Many of the Glissenti woodcuts are reproduced in Venetian works published in 1670 and 1677. This edition of 1609 is apparently the second one, for in the Sears' catalogue (1889), a first edition is described as having been printed by Dom. Ferri, in Venice, in 1596. It was said to be extremely rare, as is also the 1609 edition.

About 1600, there was published

per-plates engraved by Eberhard Kieser. This is most probably the earliest reproduction of the Holbein woodcuts as a whole in copper-plates, although Henry Aldegrever in 1541 engraved on copper a dance of death in 8 plates, copied from the Lyons edition, and which are copied by Kieser in this work of his. The entire series of the *Imagines Mortis* is reproduced, mostly reversed and in different order, with some new and original ones. Among the latter are the Jew and the Jewess, and the "Meusthurn" which is represented in the form of a human head, with a door for the mouth and win-

dows for the eyes. A ladder leads up to one of the windows through which Death is entering. The devils are

reversed and shows slight variations in detail. In 1647 there was issued at Nuremberg a copy of the Kieser



FIG. 36. PHYSICIAN AND DEATH. FROM THE 1794 LONDON EDITION OF HOLLAR, WITHOUT DIEPENBEEKE'S BORDERS.

omitted from the plate of the Pope. The frontispiece is an elaborate design of an arched gateway, surmounted by the Holbein arms of death; in the pediment are the three Fates; below them in the gateway are Adam and Eve and the tree of life. On each side are skeleton caryatids. The pages have borders of flowers and fruits, accompanied by Scripture texts and verses in German. Both the title and text are copied from Caspar Scheyt. Five editions of this work were printed in Frankfort; one in 1625 has both Latin, French and German verses. The plate of the physician is also

edition in the form of 60 copper-plates engraved by A. Khol. This edition has a frontispiece by Georg Strauch, and a new translation of the Latin verses into German. Langlois believes that eight of the first plates of this series are copies of those by Aldegrever which were made in 1541, and were copied by Kieser in his editions. The Kieser plates, or copies of them, appear also in an edition by Johann Vogel, "Icones Mortis," printed by Christoff Lochner of Nuremberg in 1648. This edition has two new title-pages, and the 60 copper-plates are followed by an end-piece, a new

conception of the charnel house motive, with heaped-up skulls and underneath is the motto, "Hie sage, wer

In 1650, the brothers Rudolph and Conrad Meyers brought out at Zurich their "Sterbenspiegel," with 60 cop-



Medice, cura te ipsum. Luc. 4.

FIG. 37. PHYSICIAN AND DEATH. FROM THE ENGLISH EDITION OF HOLLAR, 1804.
AFTER REBITING OF THE ORIGINAL PLATES.

es sagen kan, wer König ist? Wer unterthan?" This plate bears the mark of Paulus Fürst. In the sixty plates are included Kieser's Meusthurn, and his Jew and Jewess. The plate of the physician is reproduced in Figure 33. It is a very good reproduction of the original Holbein. Changes in the features of the physician and the old man may be noted, and the tiles of his study floor now appear with decorative figures. The floral border, with its examples of old garden flowers, is quite attractive, and does not detract from the interest of the plate. These borders, although the individual flowers are repeated, are different for each plate.

per-plates, published by Johann Jacob Bodmer. Some of the plates engraved by Rudolph bear the date 1637. He died in 1638, and his brother in 1689. This work was the first to break away from the slavish imitation of Holbein, both as to subject and treatment. Most of the subjects are wholly original in conception, and even those borrowed from Holbein are treated so differently that the resemblance is slight. They are on the whole beautifully executed, and the plates are full of interest. Somewhat baroque in style, they show an excess of detail which at times is rather cloying. The more simple of these plates, such as the Cook, the Baumeister, and the Physician, are

the most effective. One plate represents the Quacksalver, but it is not very successful. The text is new and

breeches. His sleeves have wide embroidered or lace-trimmed cuffs. He sits at his reading desk in an office



FIG. 38. PHYSICIAN AND DEATH. SOLOMON VAN RUSTING, AMSTERDAM, 1741.

increased in amount and strongly religious in tone. The book closes with a group of eight dance of death songs for four voices. The plate of the Physician is here reproduced (see Fig. 34). For the first time in the history of the Totentanz he is represented in a costume other than the medieval. He is an oldish man, with full beard. He is wearing a skull cap. He is attired in seventeenth century jerkin and knee-

which looks more like a kitchen, so numerous are the jars and other utensils upon table and shelves. On the wall hang a water-container, a bleeding-basin and the physician's broad-brimmed flat hat. The floor is made of wide boards and no sleeping dog lies thereon. Death sits on a stool besides the physician's desk, and reaches to him a skull in his right hand, and a bunch of leaves in his left. He has a skeleton-

ized head but a fleshy body around which a long shroud is wrapped. The physician raises his hands in astonishment, but the look in his face hints that his last hour has come. Behind the seated figure of death, through an open door, enters a bowed female carrying in her right hand the urine-basket. She, from her appearance of weakness, is undoubtedly the patient. There is no deep irony or satire in this conception of the situation. Death is simply surprising the physician in the midst of his professional activities. His time has come. But the thoughts expressed in the accompanying text are bitter enough.

Tod zum Artzt.

Darinn besteht dein tuhn/dasz du beschawest
harn;
beraubest Krankne leut/und jagest sie ins
garn
meins tödtlichen gewalts. Man fragt dich
um das leben;
so pflegest/was vor mich/dem Kranknen
eynzugeben.
Vermehrer meines Reychs; nicht zwar mit
mord und brand
jedoch mith artzeney und tollem unver-
stand;
Nun wird die Welt getröst/wann von dir
wird gesungen;
der Doctor ist (er muszt) auch an den Dantz
gesprungen.

If Death is speaking the common opinion of the Physician the reputation of the latter in the middle of the seventeenth century must have been dubious indeed. But listen to the cynicism of the Physician's answer.

Antwort

So bist du dann der Tod? ich aber bin der
Töder/
und ist noch ungewüsz/wer under uns der
schnöder.
Ohn mitel/hawest du des Menschen leben
ab:
durch mitel bring ich Ihn mit feinem schein
zu grab.

Du hast den zweck/dasz er geledigt werd von
sünde;
und ich/dasz übels tuhn er forthin nich mehr
künde.

So unterschneiden wir hiemit das Todt-
enrecht/
mit disem Todtensatz: du Meister und ich
Knecht.

A second edition of the Sterbenspiegel was brought out by Bodmer in 1657; and in 1704, under the title "Erbau-licher Sterb-Spiegel" copies in copper of Meyer's plates (57) were brought out in an edition of Redel's songs of death, printed in Augsburg. The copies are inferior to the originals and show some changes. In 1759 the original plates were again used, with additional new ones, in an edition published in Hamburg and Leipzig.

In 1654, under the title "De Doodt vermaskert," an edition of Holbein was brought out in Antwerp by Bellerus with text by Geeraerd van Wolsschaten. This contained 18 woodcuts, 14 of which were the original blocks retouched, preserved for more than a century after their first use. The other 4 engravings were very poor copies. As 7 of these blocks had the monogram AS (thought to be Ant. Sylvius), they probably were blocks used for the Birkmann edition of 1555. In 1698 an edition of copper-plates with the same title, and with Wolsschaten's name was brought out in Antwerp by Jan Baptist Jacobs. It has the same text as the edition of 1654, but has 52 plates which show various changes. In Venice in 1669 and in Milan in 1671, editions were issued in Italian of a curious work entitled "Varii e veri retratti della morte disegnati in imagini," by the Jesuit priest, Gio. Bap. Manni. Douce makes the error of spelling his name as Marmi. These editions contained a frontispiece and 29 plates engraved on

copper, of which six, those of the Queen, Nobleman, Merchant, Gamblers, Physician, and Miser are fairly

and on the head of the other plates. They show no originality in treatment. Wenceslaus Hollar, the Bohemian



FIG. 39. DEATH AND THE PHYSICIAN. MICHAEL RENTZ, 1753.

close copies of the original Holbein. The others are original, dealing with religious aspects of death, and possess no artistic value. Copies of the Birckmann edition of Holbein of 1555, engraved on copper by And. Trost, were published in 1682 by Valvasor, under the title of "Theatrum mortis humanae tripartitum." Trost's name appears on a beautiful frontispiece

etcher, was born in Prague in 1607, and died in London in 1677. England had been his home for many years, and there he had produced a great portion of the twenty-seven hundred and forty plates ascribed to him. He was one of the greatest etchers the world has ever seen. Particularly are his plates of still life wonderful; no one has ever been able to reproduce

fur, shells, or the wings of butterflies in any degree approaching his extraordinary skill in the execution of such

edition, and partly of prints in the Cologne edition of 1555. Ten of these plates correspond to the Lyons wood-



FIG. 40. DEATH AND THE PHYSICIAN. CHRETIEN DE MECHEL, BASEL, 1780.
BEAUTIFUL REPRODUCTION OF THE HOLBEIN, IN ETCHING ON COPPER.

subjects. His is probably best known for his mathematically exact, but wholly artistic, architectural plates. He had a varied career, was constantly imposed upon by the English booksellers, working for them for four pence an hour; and died in great poverty. Seven years before his death he produced one of his greatest plates, that of Edinburgh. In 1647 an edition of thirty beautiful copper-plates of the "Dance of Death" was brought out in London. These were copies made by Hollar, partly of the Lyons

cuts, with slight variations in five of them. All are reversed except one. The remaining plates are reversed, with one exception, from the copies in the Cologne edition. Why Hollar used so many of the poor copies of the spurious edition can only be conjectured. It would seem probable that he had no perfect copy of the original woodcuts, and was obliged to use the spurious edition in order to fill out the set. At any rate, later in life, he seems to have discovered his error and to have begun another

set of etchings from the original work, only four of which were completed before his death. Hollar's plates

the title of "Mortalium Nobilitas." Other English editions of the Hollar plates without the borders appeared



Medice, curate ipsum. LVCAE. III.

FIG. 41. DEATH AND THE PHYSICIAN. REPRODUCTION OF HOLLAR'S PLATE, BY DAVID DEUCHAR, 1788.

were again used in an edition printed in London in 1651, entitled "Mortalium Nobilitas," with funereal borders engraved by Abraham A. Diepenbeeke, a pupil of Rubens, most probably at Antwerp. The plates for these ornamental borders fell into the hands of Petau and Van Morle, printsellers in Paris, who made proofs of them bearing their address. Their ultimate fate is unknown, as Hollar's etchings afterwards appeared without them. There was no text to the plates of Hollar's etchings, except the Latin scriptural passage under each. As a frontispiece to the work, Hollar transferred the Holbein Arms of Death from the end to the beginning, with

in 1682 and 1789. The copper-plates apparently came into the hands of an English family of nobility, from whom the bookseller, Edwards, obtained them, and who brought out in 1790 a French edition "Le Triomphe de la Mort," published in London. In 1794, Edwards issued an English edition, "The Dance of Death painted by H. Holbein and engraved by W. Hollar," also published in London. This edition comprised poor proofs of the old copper-plates of Hollar, with the first dissertation on the Dance of Death by Douce. About this time, according to Douce, Edwards had the original plates rebitten with great care. In 1796 and 1804, other

editions of the same were brought out in London. In the editions of 1789, 1794, 1796, and 1804, occurs the plate

ber of changes. The bookshelf on the wall behind the physician is extended around the corner to the door. It



FIG. 42. DEATH AND THE PHYSICIAN. REPRODUCTION OF HOLLAR'S PLATE WITH DIEPENBEEKE'S BORDERS. DAVID DEUCHAR, LONDON, 1803.

attributed to Hollar of a copy of an old woodcut prefixed to Lydgate's "Dance of Machabree (see Fig. 2). In 1816, an edition with 33 plates, and descriptions in English and French, was printed for J. Coxhead of London. Editions of this, colored by hand, were also produced, and were apparently very popular in England. Numerous copies of these appear in the trade. This edition contains also the copy of the old woodcut in Lydgate's poem. The first editions of the Hollar plates are very beautiful. They are slightly smaller than the original woodcuts (see Fig. 35). In the plate of the Physician, Hollar introduced a num-

ber of changes. The bookshelf, and jars. Below it is a smaller rack which holds folded papers, prescriptions or bills? Two rows of bull's-eyes show in the window in place of the one row in the Holbein prints. The door through which death and the patient have just come is left open. It is closed in the Holbein woodcut. The construction of the door is quite different. The arch and transom are much smaller and the frame of the door shows a heavy molding. The plaster is broken from the wall above the door. The floor is untiled, and strewn with litter, presumably bones for the dog. The reading desk is

altered in style. The physician's face is sharper, and has a wholly different expression. The figure of death is 1794 English edition was evidently



FIG. 43. DEATH AND THE PHYSICIAN. J. R. SCHELLENBERG, WINTERTHUR, 1785. ROCOCO PERIOD.

much altered. He has hair on his head; his ribs are less distinct; and flaps of skin hang down from the belly and back. His face has lost wholly its look of sly humor and deprecation which is such a feature of the Holbein plate. The urine flask has a much shorter neck. The Diepenbeeke border is appropriate and rather attractive. What became of all the early impressions of the Hollar plates is a mystery. There are very few of them in the print collections of Europe,

printed before the rebiting took place, as it shows signs of much wear (see Fig. 36); while that from the English edition of 1804 is sharp and distinct, evidently printed after the plate had been rebitten (see Fig. 37). The later French and English editions of the Hollar plates, with Douce's dissertation on the Dance of Death must have been extremely popular as gift books in England about the beginning of the nineteenth century, particularly from aunts and uncles to their young

nieces, as many copies the writer has seen testify. In 1657, an edition of 30 copper-plates, copied after Hollar by Tho. Neale, was issued in Paris. They were smaller than the original plates, and reversed, but were very well done. The arms of death was used for the frontispiece, and Hollar's title "Mortaliū Nobilitas" was used. At the bottom of the frontispiece is "Tho: Neale, Paris, 1657." Very few copies of this are known.

In a work entitled "Merck's Wien," printed at Vienna in 1680, there were eight copper-plates dealing with dance of death subjects evidently inspired by Holbein. It is a record of the plague in Vienna in the year 1679, by Father Abraham à St. Clara. One of the plates shows Death seated at a pipe-organ. At the end of each chapter is a tailpiece adapted from Holbein's arms of death. Father Abraham died in 1709, but in the next year there was published by Christ. Weigel at Nuremberg a work ascribed to him, containing 68 copper-plates on dance of death subjects. It was entitled "Todten-Capelle oder Allgemeiner Todten Spiegel." Three other editions were issued at Amsterdam in the years 1737, 1741, and 1764, these being copies and imitations of the German edition. The greater number of the plates are new and not appropriate to the subject; only a few suggest Holbein's influence. They are poorly executed. The text is a mixture of prose and poetry of a religious nature.

In 1707, an edition of 30 copper-plates by Solomon van Rusting, Med. Doct. in Amsterdam, was issued by Jan Ten Hoorn, under the title "Het Schouwtoonel des Doods." Six of the plates were copied from the designs of Holbein, the others are original

in design and content. These plates were very popular; a second edition was issued in 1726, a third in 1735,

The PHYSICIAN.

Physician, heal thyself.

LUKE iv. 23.



Diseases well thou understand'st,
And cures canst well apply,
Which to the Sick, in Time of Need,
Will welcome Health supply.

But while, O dull and stupid Wretch,
Thou others Fates dost stay,
Thou art ignorant what fell Disease
Shall hurry thee away.

FIG. 44. DEATH AND THE PHYSICIAN. JOHN BEWICK, "EMBLEMS OF MORTALITY," LONDON, 1789.

a fourth in 1741, and a German edition in 1736 in Nuremberg, with the title "Schau-Platz des Todes, oder Todten-Tanz." The 1741 edition was reprinted in 1801 by Fock of Amsterdam. Many of the plates deal with biblical subjects. New subjects intro-

duced are those of "The Skaters," "The Miller and Wind-Mill," "The Masquerade," and "The Tight-rope



No. XIX.—THE PHYSICIAN.
Physician, heal thyself.—*Luke*, iv. 23.

DEATH is leading to him a sick old man, whose urine he is presenting to him in a phial, and appears to be saying, in a jeering manner, Dost thou think that thou art able to save a man whom I have already in my power?

FIG. 45. DEATH AND THE PHYSICIAN. THOMAS BEWICK, "THE DANCE OF DEATH OF THE CELEBRATED HANS HOLBEIN," LONDON, 1825.

Walker." The frontispiece is a fantastic arrangement of Death crowned, sitting on a throne, with seven deaths dancing near a crowned skeleton lying on a couch. Rusting, like Glissenti, appears to have been a medical man with strong religious convictions. Very little is known of him. In his early years he practiced as an army surgeon. His plates are clever and original; his text simple and naive. In the one of the Physician, the sick man lies near to death in a canopied four-poster bed (see Fig. 38). Around him are the weeping members of his family. In the left foreground stands the physician examining the flask of urine. He is dressed in the costume of the early eighteenth century, knee-breeches, ruffled collar, and broad-brimmed hat. The text says:

. . . Der Patient soll leben;
Du aber soll't dich selbst vor ihm zu Grab
begeben.

The uncertainty of diagnosis and prognosis is here emphasized. The physician is reminded that many patients given up to die, recover either of their own accord, or through another's aid, and live many years longer than the physician himself.

In 1720, an edition of 19 plates of Holbein's "Imagines Mortis," engraved on copper by Nieuhoff Piccard was issued. The designs with slight variations correspond to those in the editions of the original woodcuts printed after 1545, as is shown by the inclusion of the Soldier, Fool, and Blind Man, which did not appear before that date. The Physician is not included. The plate of the Temptation had these lines on it:

All that e'er had breath
Must dance after Death

with the date 1720. These copies seem the work of an amateur, rather than of an artist. Piccard apparently presented sets of proofs of his plates to various friends. One of them addressed to "Mynheer Heymans" contains a reference to the burning of the palace of Whitehall, with the destruction of a painting of a Dance of Death by Holbein. In another dedication he mentions "that scarce little work of Hans Holbein neatly engraved on wood, and which he himself had painted as large as life in fresco on the walls of Whitehall." These references constitute the chief literary evidence that Holbein painted a dance of death in Whitehall, although Douce, who accepts this story, interprets other literary allusions as referring to this same hypothetical painting. This positive evidence is overwhelmed by the

greater negative proof. If Holbein had painted a fresco of the Dance of Death at Whitehall, surely in the extensive catalogues of his works extant, there would have been some mention of such a work. The plates of Piccard's etchings evidently came into the hands of English printers, as broken sets of them appear in the trade.

In 1753, an edition of "Geistliche Todt-Gedancken" by Michael Rentz was printed in Passau by F. G. Mangold and produced in Linz by F. A. Ilger. In 1759 a reimpression with slight changes was made in Hamburg. Under the title "Der sogenannte Todentanz" there was published by von Trattner in Vienna in 1767 an edition of the same 52 copper plates by Rentz accompanied by a poem by Patricius. The Passau-Linz edition had a prose text. From the prolix title-page we gather that these pictures by Rentz were also painted on the wall of the hospital in Kuckucksbad. Another edition was issued in 1777 in Linz, and one of unknown date probably in Prague. Rentz's plates are inspired by Holbein, present the same subjects, but in a wholly different style and treatment. They are full folio page in size, enclosed in ornamental frames, with rather heavy scrolls above the pictures and tablets below bearing the name of the individual represented, with a German quatrain. The style is baroque and the details are rather heavy, and in the majority of the plates over-done; yet some show originality and spirit. The Physician (see Fig. 39) sits by a low table on which there is a pair of scales. On the right through an open door there has just entered a patient, led by a child and leaning upon a cane, a tall, haggard woman, wrapped in flowing garments, but bare-footed, with ankles appar-

ently swollen. The child has just given the urine flask into the physician's left hand, from which it drops, upside



DER ARZT

FIG. 46. DEATH AND THE PHYSICIAN. DANIEL NICOLAUS CHODOWIECKI, 1792. ROCOCO PERIOD.

down, spilling its contents. For at the moment of receiving the flask, the physician has been surprised by Death, who appears behind him, seizes him by the right shoulder and holds out the hourglass in his extended left hand. The physician turns his head toward death. The physician's interest in anatomy is shown by the mounted skeleton of an animal on the bookcase behind him. On the wall near the entrance door there hangs a large barometer. The progress of science is thus indicated for the first time in the dance of death pictures. The quatrain below the plate is:

Sprich nicht dasz diesem armen Weib der Tod
sitz auf den Nacken,

Er wird vielmehr dich augendblicks, trotz
deiner Kunst anpacken.
Sie lebt! du stirbst; brauch Gold-Tinctur
und alle Panaceen
Brich ich den Stab so ist's um dich ja selbst
Galen gescheen.

Forty-six of the Holbein plates were engraved in copper by Chretien de Mechel, of Basel, and issued in 1780, under the title of "*Le Triomphe de la Mort*." This edition included prints of the design for the dagger sheath copied from Holbein's drawing in the library at Basel. The text is in French. Twenty-three of the plates are reversed, and there are slight differences in a number of them. The facial expressions are much altered. Nevertheless, they are one of the most beautiful reproductions of Holbein. De Mechel was an artist and engraver of the first rank, and this edition is a masterpiece. The plate of the Physician is an especially beautiful one, although it shows certain departures from the original. Half of the window is shown at the left, and the shelf upon the wall is enlarged. The physician himself has a plumper, more self-satisfied face, and that of the patient is less senile than in the original. The chief loss in this plate is in the altered expression of the face of death; it is serious and has entirely lost the sly deprecatory air it has in the original (see Fig. 40). Copies of the original de Mechel are very rare, but good modern reproductions of it appeared in Paris, about 1860, and in Uttweil in 1858. The original is a royal quarto, the copies are small quartos.

David Deuchar, a Scottish etcher, who etched many plates after the Dutch masters, and for this reason is often called the Scottish Worlidge, issued in Edinburgh, in 1788, an

edition of 46 plates of Holbein's Dance of Death. It is a curious mixture of copies of Hollar and De Mechel, and is very inferior to their work. The title-page bears the following: "The Dances of Death through the various stages of human life, wherein the capriciousness of that tyrant is exhibited in forty-six copper-plates; done from the original designs, which were cut in wood and afterwards painted by John Holbein in the town house at Basle, to which is prefixed descriptions of each plate in French and English, with the scripture text from which the designs were taken. Edinburgh, MDCCLXXXVIII." Preceding this very inaccurate title-page are two frontispieces, one a portrait of Deuchar with an ornamental border of medallions; the other is a copy of De Mechel's frontispiece with the name of David Deuchar and the date 1786 inserted. Thirty of the etchings are copies of Hollar's plates, with the distance altered; the others are taken from the woodcuts of the Cologne edition of 1555. According to Douce, the plates in the Edinburgh edition have copies of Diepenbeeke's borders, but this is not true of the copy belonging to the writer, in which the plates have no borders. De Mechel's descriptive text in French with an English translation is used. The design of the dagger sheath, copied from De Mechel, is introduced at the end without any explanatory text. The plate of the Physician is a reversed copy of Hollar's plate, and decidedly inferior. There is more litter upon the floor (see Fig. 41). The paper used in the Edinburgh edition is extremely poor, which may account in part for the poor impressions of the plates. Two other editions of Deuchar were printed by S. Gosnell, London, in

1803, one with reversed and slightly altered Diepenbeeke's borders (see Fig. 42), the other without these. through ballooning, tight-rope walking, etc. This work marks the transition to the modern German treatment of the



Døden til Doctoren
 Hr. Doctor, det er Tid, du Kunsten maa opgive,
 Og ei methodice flere Mennesker afside!
 Du paa Uringlas seer, som Stormand paa Kompas,
 Men glemmer desimod dit Livs Timeglas.

FIG. 47. DEATH AND THE PHYSICIAN. FROM THE "DET MENNESKELIGE LIVS FLUGT, ELLER DODE-DANDS," COPENHAGEN, 1814.

In other respects these editions are identical, and both bear the same date. The prints in these London editions are much better than those of the Edinburgh, and a better quality of paper is used. As late as 1887, an edition of Deuchar, with the borders, was brought out in London by Hamilton, Adams and Company. Many of the prints are poor.

Under the title of "Freund Heins Erscheinungen in Holbein's Manier," J. R. Schellenberg produced in Winterthur in 1785 a dance of death with frontispiece and 24 original and clever plates. There is no imitation of Holbein in the choice of subjects or in the manner or presentation. The series is wholly original, in true baroque style, and includes death

Dance of Death motive. The plates are accompanied by explanatory poems. The frontispiece contains portraits of Voltaire, Frederick of Prussia, and others. The costumes and manners represented are contemporary of the late eighteenth century. The first plate is a bold and indecent one of Death throwing a net over a pair of young lovers caught in the act of love. The plate of the Physician (see Fig. 43) is modernized for the times represented. A crowd of patients is pouring from an ante-room into the inner office. The Physician has arisen from his armchair and stands talking with Death. The former wears a long cloak or gown over his tightly buttoned coat and knee-breeches. He wears a wig, and has on buckled shoes. He is

plump and prosperous. At a table with a pair of scales a young assistant is seated. The doctor is apothecary ing, in Upwards of Fifty Cuts, Death seizing all rank and degrees of people; Imitated from a Painting in the



Döden.
Herr Doctor nu är tid, att konsten din uppgifas,
Du får ej längre tid att slet resepter skriva.
Se att ditt simglas re'n till botten runnit är,
Som vittnar att ditt lif ej längre föras får.

FIG. 48. DEATH AND THE PHYSICIAN. FROM "DET MENSKLIGA LIFWETS," FAHLUN, SWEDEN, 1838.

as well, according to the custom of the times. The urine bottle is not in evidence. The shelves against the wall are filled with bottles and flasks. From the ceiling is suspended a stuffed crocodile, advertising the doctor's taste for natural history. Death has come for the physician, who argues with him to delay his taking-off, the gist of his argument being that it is poor policy and bad business to destroy one who sends him so many victims. But his argument is in vain.

In 1789, there was printed for T. Hodgson of London an edition of 51 woodcuts by John Bewick, brother of Thomas Bewick, under the title of "Emblems of Mortality, Represent-

Cemetery of the Dominican Church at Basil, in Switzerland: . . . Intended as well for the Information of the Curious as the Instruction and Entertainment of Youth." Here again is the old confusion of Holbein's woodcuts with the Totentanz of Basel. The engravings are preceded by a frontispiece representing a Dance of Death procession from a city gate to the open grave. There is an introductory dissertation by J. S. Hawkins. The woodcuts are faithful copies of the original Holbein cuts, with the exception of the first one containing the Deity, which was exchanged for another design. They are poorly executed and show slight variations. The cut

of the Physician (see Fig. 44) is particularly poor, the Death having lost its original force. The window on the left is replaced by a cupboard containing bottles. In 1825, there was published by William Charlton Wright in London, an entirely different edition, entitled "The Dance of Death of the Celebrated Hans Holbein; in a series of Fifty-two Engravings on Wood By Mr. Bewick; with Letter-Press Illustrations." This has a new frontispiece on the same subject as that in the preceding edition. The cuts with several exceptions are imitations of the original Holbein, but are absurdly modernized; both the costumes and properties are represented in the contemporary style. There was another edition of the same cuts, with two exceptions, published in London by Whittingham and Arliss, Juvenile Library. Both of these last editions were evidently intended for popular and juvenile use. Rather strong meat for the latter! These prints have somewhat of the quality of caricature in them. The Physician (see Fig. 45) is an old man in gown, wig, and stock, seated in an armchair before his desk in a room with modern furnishings. Death holding a stoppered bottle leads in an old decrepit man. The round full face of the doctor contrasts with the emaciated one of the patient. If these cuts are Bewick's, which Douce seems to doubt, they are far inferior to his other work, and executed in a different style. They represent a far departure from the old medieval conceptions and treatment, and betray the tendency of the early nineteenth century to use the Dance of Death motive for purposes of caricature.

The Totentanz mythus abandoned completely its medieval trappings and atmosphere in the series of twelve

copper-plates etched by the German artist, Daniel Nikolaus Chodowiecki, published in the "Königlichen Gross-

THE PHYSICIAN.

Physician, heal thyself.—Luke iv. 23.



Diseases well thou understand'st,
And cures canst well apply,
Which to the sick, in time of need,
Will welcome health supply.

But while, O dull and stupid wretch,
Thou others' fates dost stay,
'Thou'rt ignorant what fell disease
Shall hurry thee away.

FIG. 49. DEATH AND THE PHYSICIAN. FROM "EMBLEMS OF MORTALITY," ALEXANDER ANDERSON, CHARLESTON, S. C., 1846. ORIGINAL BLOCKS CUT FOR AN EDITION SAID TO HAVE BEEN PUBLISHED IN NEW HAVEN, CONN., IN 1810.

britannischer Historischen Genealogischen Calendar for 1792." Of this artist, Goethe had once said to Eckermann that he succeeded wholly in the depiction of contemporary life, whereas he failed as completely when he attempted Greek or Roman subjects. The use of a Dance of Death for the adornment of a calendar may seem

strange to us, but Chodowiecki was so successful with these etchings that many critics regard them as one of the

as shown by the spacious, lofty, molded, corniced ceiling, and the canopied bed. The patient, in dressing



FIG. 50. DEATH AND THE PHYSICIAN. FROM A LITHOGRAPHIC REPRODUCTION OF DENECKER'S WOODCUTS OF 1544. BY L. HELLMUTH, MAGDEBURG, 1835.

best works of this master. The representation is bold and full of life, the invention of the subjects original, and the intellectual significance deep and powerful. There is no direct imitation of Holbein, yet it is evident that Chodowiecki knew his *Imagines Mortis*, and in the plate of the Pope the composition recalls strongly Holbein's engraving of the same subject. The plate of the Physician shows an entirely new and modern (late 18th century) conception of the subject (see Fig. 46). The scene is the bed-chamber of an old and wealthy patient,

gown, night-cap, and slippers, sits in a winged armchair, his feet resting on a cushion. On the floor is a syringe. The physician is taking his pulse at the left wrist. He has a wig, wears a full-skirted long coat over a long tightly-buttoned waistcoat, knee-breeches, stockings, and low buckled shoes. He is pompous, plump, and prosperous in appearance. At this moment Death steps in between patient and physician and with his left hand seizes the doctor's precordium in a strangle hold. The latter, with eyes closed, is in the act of falling backwards. May this not

be interpreted as an attack of angina pectoris! Chodowiecki's description of the plate is as follows: "Der Artzt hat seinen Kranken das Leben abgesprochen, der Tod lässt den Kranken sitzen und holt den Artzt."

A Danish version of the Dance of Death is given in a series of curious woodcuts issued in Copenhagen in 1814 under the title of "Det Menne-skelige Livs Flugt, eller Dode-Dands." There is an introductory cut of five skeletons playing musical instruments, three of them wear the three-cornered military cap of the period. Each cut has two figures only, Death and his victim. They stand on a tiled floor, without background. The living figures are all in contemporary costume. The accompanying colloquies are by Thomas Larsen Borup. There is no direct imitation of Holbein, save in the rank of the personage represented. The Physician (see Fig. 47) wears the long bell-skirted frock coat, with wig, stock, waist-coat, knee-breeches, and buckled shoes. He has a three-cornered hat under his right arm and a cane in his hand. He raises aloft in his left hand the urine flask. Death, in the form of a complete skeleton, prances before him, holding an hourglass in his right hand, while with his left he presents a paper to the doctor. Hour-glass is set up against urine-glass to the evident disadvantage of the latter. It is a simple, naive, conventional representation of the subject. In 1838, an edition, "Det Mensklige Lifwets" was published in Fahlun, Sweden. The same woodcuts used in the Danish edition are repeated, reduced in size, and reversed (see Fig. 48).

Apparently there was published in New Haven, Conn., in 1810, an edition of woodcuts, copies from John Bewick's 1789 edition, by Dr. Alex-

ander Anderson, the noted American wood-engraver of his day. The author has been unable to obtain a copy of



FIG. 51. DEATH AND THE PHYSICIAN. HULDERIC FRÖHLICH, BASEL, 1608.

this edition, and has never seen one. It is not in the British Museum. The original wood blocks, having been preserved for nearly forty years in the Babcock printing office in New Haven, were taken to Charleston, S. C., and a new edition printed there by Babcock and Co. in 1846. It had paper covers, of which the author has seen two kinds, both bearing the same date. It has the same title as the Bewick book, "Emblems of Mortality," and the same plates, save three of Adam and Eve, which the editor says: "it was

thought advisable to omit," an example of the Victorian prudery of the day. The plates are reversed, and there are

Der Todt zum Doctor.

Er Doctor b'schaut die Anatomen
An mir / ob sie recht gmachtet sey/
Dann du hast manchen auch hing'richet/
Der eben gleich / wie ich jetzt / sieht.



Der Doctor.

Ich hab mit meinem Wasser b'schawen
Geschoffen beyde Mann und Frauen:
Wer b'schaut mir nun das Wasser mein/
Ich muß jetzt mit dem Tode dahn.

FIG. 52. DEATH AND THE PHYSICIAN. FROM THE 1724 EDITION OF CONRAD DE MEHEL, BASEL.

slight changes in many. Anderson had a different technic from that of Bewick, but he is said to have been a great admirer of the art of the Bewick brothers, and to have imitated them. At any rate, some of his plates are much superior to those in the 1789 edition of John Bewick. In the print of the Thief, Anderson's background of trees and foliage is far superior to that of John's, and reminds us of Thomas

Bewick's style. Anderson's plates are so uneven, however, and vary so in technic and style, that it is hard to believe that they all represent the work of one artist. One has the impression that he experimented with his blocks. His Physician has a round fat face, middle-aged, and not particularly intelligent. The expression of Death is altered, an improvement upon Bewick; so is the expression of the Patient. Other changes in details are seen in the door, in the larger keystone of the arch above it, the changed design in the transom, and the absence of the strap-hinge. Also the patient's hood is altered (see Fig. 49). Anderson's book is of especial interest as being the first American production dealing with the dance of death subject.

Der Todtentanz, a poem by Ludwig Bechstein, with 48 copper-plates after Holbein, was published by Leo, in Leipzig, 1831. The beautiful plates were etched by M. Frenzel, Inspector of the print collection in Dresden. They are faithful contour copies of the originals, and have a delicate charm of their own. In 1832, a lithographed reproduction of 53 of the Holbein woodcuts, with an explanatory text, was produced by J. Schlotthauer, in Munich, as already mentioned. These lithographs were exquisitely done; and in 1842 a new edition was brought out in Paris, with explanatory text by Fortoul. The Munich edition is one of the best reproductions of the Holbein woodcuts, and the difference in medium adds greatly to their interest. In 1849, they were re-issued in London by John R. Smith, with historical and literary introduction.

"The Dance of Death, Exhibited in Elegant Engravings on Wood," by Francis Douce, was published in London in 1833, by William Pickering. This

has already been mentioned as one of the best facsimile copies. The 53 woodcuts were engraved by Bonner and

serious study of the Dance of Death mythus. In it he collected an immense amount of data concerning the known

Tod zum Doctor.
Herr Doctor b'schaut die Anatomey
 An mir, ob sie recht g'machet sey:
 Dann du hast manchen auch hing'richt,
 Der eben gleich, wie ich jetzt sicht.



Antwort des Doctors.
Ich hab mit meinem Wasserb'schauen,
 Geholfen beide Mann und Frauen:
 Wer b'schaut mir nun das Wasser myn,
 Ich muß jetzt mit dem Tod dahin.
 E 2

FIG. 53. DEATH AND THE PHYSICIAN. FROM THE COPPERPLATE EDITION OF THE BASEL TOTENTANZ. BY MATTHEW MERIAN, THE ELDER. FRANKFORT, 1649.

Byfield. These were two of the best contemporary artists in the line of wood-engraving, and their blocks were executed with great skill. They are very faithful copies and have been described as scarcely distinguishable from the originals. This is a slight exaggeration, but the cuts are, nevertheless, extremely good copies. Douce's book marks the beginning of the

editions of Dance of Death illustrations, and the greater part of this is quite accurate. His main thesis that Holbein was not the artist of the woodcut series of the Imagines Mortis, but had painted a Dance of Death in the palace at Whitehall, was founded upon insufficient data and fallacious reasoning. Nevertheless, his book is a mine of information for students of the Dance

of Death. It has been reprinted several times, in the Bohn Library series by Bell and Daldy, London in

of individual, full-faced, short and stocky, with an expression of self-assurance and importance.



FIG. 54. DEATH AND THE PHYSICIAN. FROM THE LITHOGRAPHIC EDITION IN COLORS OF THE BASEL TOTENTANZ, BY WENTZEL, WISSEMBOURG, 19TH CENTURY.

1872; and by George Bell and Sons, London, 1902. Impressions from the blocks of Bonner and Byfield were used in an edition issued in 1892 by the latter firm with introduction by Austin Dobson. A lithographic edition of Denecker's woodcut copies of Holbein of 1544 was brought out in Magdeburg, by Robrahn and Co., in 1835. There were 46 plates, signed L. H. (Hellmuth). They included the famous Adulterer cut, the only reproduction of this that the author has ever seen. They present slight variations from the original Denecker cuts, as the plate of the Physician shows (see Fig. 50), in which the man of medicine appears as an entirely different type

In the 19th century, old wood blocks of a number of the Holbein designs were found in a printing office in the north of England. It is not known to which of the many editions of Holbein they belonged. Eleven of these were reproduced, one as a colored frontispiece, in a limited edition by T. T. Wildridge, published in 1887 by Redway of London. The cut of the Physician is included, and it certainly is a copy of Hollar's plate, without the borders. It is impossible within the limits of this work to enumerate and describe all of the reproductions and imitations of Holbein. The many editions in foreign languages other than those mentioned,

must be disregarded. The Holbein Society's facsimile reprint of 1869 has already been mentioned. Quaritch attempt has been made in this work to consider the innumerable broken sets and single prints of Holbein that



FIG. 55. DEATH AND THE PHYSICIAN. FROM THE MODERNIZED EDITION OF THE BASEL TOTENTANZ, PUBLISHED AT LOCLE, GIRARDET LIBRAIRE. COPIES OF MERIAN'S PLATES.

of London issued a series of phototype facsimiles in 1886, edited by Lippman. In 1916 there was privately printed in London a series of enlarged facsimiles of the first complete Holbein edition, that of Lyons in 1547. The cuts are enlarged to four times their area measurement, and are printed by hand from specially made line blocks, on handmade paper. This is an especially interesting facsimile reproduction. The enlargements acquire the coarseness and character of the old German woodcut book illustrations, and have a wholly different quality from the original Holbein cuts. Nevertheless, they gain in force what they have lost in delicacy, and have a certain virility lacking in the original. The print of the Physician is one of the best. The most recent reproduction of the Holbein cuts is contained in an edition issued by Amsler and Ruthardt, in Berlin, 1922. No

are scattered all through the literature and art productions of the last several hundred years. These reproductions and imitations are almost countless. It would require the work of years to collect and classify them.

HOLBEIN AND THE BASEL TOTENTANZ

It is not at all strange that the Basel wall-paintings of the Totentanz and Holbein's woodcuts should have become confused, and that the artist should have come to be regarded as having produced both of these art works. The fact that Holbein lived in Basel, and produced the designs for the *Imagines Mortis* there, that the wood blocks were cut there, and the first proofs printed there, naturally associated him with Basel. On the other hand the contemporary fame of the "Tod am Basel" was so great and widespread that any mention of the city called up this association,

and most minds instead of differentiating two dances of death belonging to Basel, thought of them as one and the same. This confusion was further aided by the fact that Holbein's first proofs were anonymous, and that twelve years elapsed between their execution and the anonymous Lyons edition in 1538. The cause of this long delay can be reasonably explained by the free political and religious attitude shown in the Holbein woodcuts. The free speech exhibited in some of these was so bold as to be dangerous; and as we know, some of the later editions were under the ban of the Inquisition. It is also probable that when Holbein passed on the cuts to the Lyons printers, he conveyed also the right of ownership in them, so that his name did not appear in the publication. Moreover, the slowness of the diffusion of knowledge in that period, and the uncertainty of authority, make it seem to us easily explainable that Holbein should have been regarded for a long time as the artist of the Basel wall frescoes. So in the reproductions of these works, there arose a curious mixture or hybrid of the two, and editions of the wall-paintings were issued under Holbein's name. We have already noted this error in the English reproductions of Deuchar and Bewick, which attribute to Holbein wall-paintings in the Town Hall at Basel.

In 1588, a curious mixture of subjects from the Holbein series and those from the wall-paintings at Basel and Berne was issued at Basel, by Hulderic Fröhlich. There were 44 subjects in all, of which 33 were taken from Holbein. This mixture of subjects led to the belief that Holbein painted the Basel wall-paintings; and

in the Fröhlich edition of 1608, and in the editions following, issued by Conrad De Mechel, and the De Mechel Brothers, there is perpetrated the same confusion between Holbein's work and the Basel frescoes. The engraving representing the Physician, taken from the 1608 edition, shows considerable variations from the Holbein woodcut. The Physician stands at the right, with both hands extended to receive the urine bottle from Death, who leads the old patient from an open door only partly indicated in the background. Through the door can be seen a mountainous landscape. The Physician's room is seen from an angle. On the wall to the right is a high bookshelf between two windows filled with bull's eyes. Below the shelf hangs a urine basket. Along the wall beneath the windows is a carved wooden bench. The physician wears a long gown with ruffled collar and voluminous sleeves. He has on a flat cap. He appears to be relatively young (see Fig. 51). The De Mechel editions are dated 1715, 1724, 1735, and 1740; those of the Frères de Mechel, 1769, 1786, and 1796. Most of these have 41 woodcuts, 27 from Holbein, 7 from the Basel Totentanz, and 7 probably from the Totentanz in Berne. The 1724 edition of Conrad de Mechel has an entirely different text from that of the 1608 edition (see Fig. 52). The cuts are arranged in different order in the editions of the Frères de Mechel, and the blocks show signs of use. Numerous cheap reproductions of these were issued in Basel during the first half of the nineteenth century. In all of these the error on the title-page is repeated in "Der Todten-Tanz wie derselbe in der weiter berühmten Stadt Basel zu sehen ist."

The true Basel Totentanz, however, was also reproduced in numerous editions, one of the earliest being a copper-plate edition issued in Frankfurt in 1649, the work of Matthew Merian, the elder. These plates were faithful copies of the old wall frescoes (see Fig. 53). Reproductions of the Merian plates were issued in 1725, 1744, 1756, and 1789. Certain changes appear in these editions, but the plates are usually well printed. The 1744 edition was engraved by Chovin, text in both French and German. During the nineteenth century numerous small sized reproductions, many of them colored, were issued in Basel as guide-books to the city. Lithographic reproductions in colors of the Basel Totentanz were issued during the nineteenth century by Hasler and Company in Basel, and by Wentzel in Wissembourg. These are very interesting and were very popular (see Fig. 54). In some of these copies the colors are garish; in others they are very good, and the series artistically attractive. While these larger lithographic reproductions are rare, those of the Merian plates are the most frequently offered dance of death items in the book trade. Many of them are undated, and show slight variations. There must have been numerous editions printed.

The transition to the modern period is also shown in the later reproductions of the Basel Totentanz. In 1788, Merian's plates, burlesqued and modernized in a curious manner, were copied by an unknown artist, and issued at Locle by the Girardet Librairie, with the title "La Danse des Morts, Pour Servir De Miroir, A La Nature Humaine, avec Le Costume Dessiné A La Moderne, Et Des Vers A Chaque Figuren." This is

a very early example of presentation of an ancient subject in modern dress, and produces the same curious effect as did Hamlet when similarly presented. The Physician is a gentleman of the late eighteenth century in wig, long frock coat, waistcoat, knee-breeches, stockings and buckled shoes (see Fig. 55). He drops the urine-flask as the skeleton Death, as in the old Basel fresco, playing a fife and carrying the urine basket on his arm, seizes him by the skirt of his coat. The accompanying text is in verse, differing from the old quatrains. The author is unknown.

La Mort Au Médecin

Disciple d'Hipocrate, Esculape nouveau;
Toi qui contre la Mort, inventa cent remèdes,
Il faut enfin que tu lui cèdes:
Elle va de ce pas te conduire au Tombeau.
Apprends que de ton art, la docte experience
N'est que trop sujette au hazard;
Et que, malgré tes soins, tes drogues, ta science,
Il faut toujours mourir, on plutôt, ou plus tard.

Réponse Du Médecin À La Mort

Qui m'eut dit que la Mort auroit épouvané
D'un expert Médecin la science assurée;
Et que mon art divin, si craint et si vanté,
Ne pourroit de mes jours prolonger la durée,
Ni me garantir de la Mort?
Il faut que du péché la mortelle racine
Soit un poison bien fort;
Puisqu'il n'est sur la terre aucune médecine
Qui puisse en arrêter l'effort.

MODERN REPRODUCTIONS OF THE DANSE MACABRE

Interest in the Danse Macabre seems to have revived in the early part of the eighteenth century, when the edition by Pierre Garnier was brought out in Troyes, in 1721. As has been stated before, interest in the Danse Macabre fell very low after the publication of the Holbein woodcuts, so that during the remainder of

the sixteenth century, there were but four re-issues, three in Paris and one in Rouen. In the seventeenth century there were but two issues, one in 1616 in Rouen, the other in Troyes in 1641. All of these were editions of the "Danse Macabre des Hommes et des Femmes." In 1728 an undated edition of the same was produced in Troyes by Jean Ant. Garnier; and in 1729 another at Troyes by Jacques Oudot, with copies of the primitive woodcuts. Both of these were quartos. In 1800 a limited edition was printed in London by Bentley of De la Barre's *Danse Macabre*, printed in Paris in 1500. Later an undated folio edition of the old woodcuts of Garnier was brought out in Paris, and a small quarto in 1858. About 1860 a reimpression on vellum by the Baron Plinski process of the *Danse Macabre* printed at Paris by De Marnef in 1490 was brought out in Paris. It is undated. A reproduction of the Marchant edition of 1486 was published in Paris in 1868. In 1869 an edition was published in Paris of "La Grant Dance Macabre des Femmes" by Marcial d'Auvergne. Editions of Gerson's "Dance Macabre," were issued in Paris in 1875, one undated, in 1891, and 1925. All of the editions of the *Danse Macabre* were rigid reproductions of the Gerson original. The subject did not lend itself to imitations and original variations, as did the Holbein work; the motive and its presentation, therefore, remained unchanged through the centuries, and the various reproductions have only a historical interest.

During this period of the "little artists," or imitators of Holbein, there was a gradual transformation

of the Physician from the medieval urine-gazing practitioner to the rococo representation of him in wig, stock, frocked coat and knee breeches. The growing importance of drugs is shown in the frequency with which the apothecary's shop is depicted as the practitioner's field of action, and the prominent part played by the prescription. In Chodowiecki and Schellenberg this transformation from the medieval to the eighteenth century man of medicine is fully achieved, and in their representations of the Physician we have a fully-developed new type. We now see the practitioner of that artificial period in which the augural cane, the clyster, and the prescription for drugs became the chief distinguishing marks of the profession. Particularly did the syringe replace the urine flask as pictorial evidence of the practitioner's professional activities. In the late seventeenth and in the eighteenth century, the clyster became as much the distinguishing badge of the practitioner as was the urine flask in the preceding ages. In the popular art of the period, particularly in the single prints showing a tendency to caricature, was this importance of the clyster as a diagnostic and therapeutic procedure emphasized. And this was fully in accord with the actual medical practice of the times. This was true of all the representations of the contemporary physician; the urine flask and medical costume were retained only in the intentional reproductions of the older art. Moreover, the physical type of the medical man had also apparently changed. In the late rococo period he is usually depicted as a fat, short man, showing all too plainly evidences of overfeeding and overdrinking. He portrays in his own person such

pathological conditions as obesity, gout, arteriosclerosis, angina pectoris, and perhaps diabetes. All of these characteristics furnished food for the caricaturist, and in the next period we shall see the extent to which the physician of the type described became the popular object of ribald and vulgar caricature. Three centuries were required for this change of type in the practitioner. In the art of this period there is nothing that would tend to reveal the tremendous development in anatomical science that was

taking place. Only the faults and follies of the popular practitioner are represented. Nevertheless, such representations do throw light upon the popular conception of the physician of the time, and this popular view does present the medical man from the standpoint of his most unpleasant features, his pomposity, obesity, augural cane, fee-grasping propensity, the clyster, and the use of drugs. The elements of quackery still persist, although in an altered form.

(To be Continued)



MEDICAL INCUNABULA IN THE LIBRARY OF THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL*

PILCHER COLLECTION OF MEDICAL HISTORY
(11 TITLES, 11 VOLUMES)†

ARGELLATA, PETRUS DE. *Libri sex Chirurgiae*. Venice [J. & G. de Gregoriis] 1499, 12 Sept.

[H 1639.]

AUSMO, NICOLAUS DE. *Supplementum Summae Pisanellae*. Venice, Hailbrun & Frankfurtia, 1474.

[H*2153.]

CAULIACO, GUIDO DE. *Chirurgia Guidonis de Cauliaco. Addita recepta aque balnei de porecta per . . . Thuram de Castello . . . edita . . .*

An undated quarto edition with the mark of Vincent de Portonariis, who was a bookseller at Lyons in 1507. Sometimes referred to as "Venice, 1499," but probably was printed after 1500.

CELSUS, CORNELIUS. *De medicina*. Florence, Nicolaus [Laurentiis] 1478.

[H*4835.]

CELSUS, CORNELIUS. *De medicina*. Venice, Pinzius, 1497, 6 May.

[H*4838.]

GUY DE CHAULIAC. See Cauliaco, Guido de.
MESUE, JOHANNES DAMASCENUS. *Liber de consolatione medicinarum, simplicium, solutivarum*. [With additional treatises.] Venice, R. de Novimagio, 1479, prid. kal. Feb. [Jan. 31].

[H*11108.]

ORTOLFF VON BAYRLANDT. *Artzneibuch*. [Augsburg, Günther Zainer, 1477 ?].

[H*12111.]

PEYLIK, JOHANNES. *Philosophiae naturalis Compendium*. Leipzig, Lotter, 1499, prid. id. Sept. [12].

[H*12861.]

Regimen sanitatis Salernitanum [commentary by Arnold de Villanova] Venice, Bernardinus de Vitalibus [c. 1495].

RHAZES, MOHAMMED. *Liber ad Almansorem* [and other medical treatises] [Venice] Locatellus, 1497, 7 Oct.

[H*13893.]

SAVONAROLA, GIOVANNI MICHELE. *Opus medicinae; Practica de aegritudinibus de capite usque ad pedes*. Venice, And. de Bonetis, 1486, 10 May.

[H*14481.]

* Compiled by Dr. Aldred Scott Warthin, Chairman of the Library Committee of the Medical School, and Ella M. Hymans, Curator of Rare Books.

† Finding list. (N.B. Complete cataloging not yet finished.)

HAASS COLLECTION

(27 TITLES, 25 VOLUMES)†

ABANO, PETRUS DE. *Tractatus de venenis*. Mantua [Burster & Hermannstadt] 1473.

[H*7.]

AEGIDIUS CORBOLIENSIS. *Carmina de urinis et pulsibus*. Venice, Bern. (de Vitalibus) 1494, 16 Feb.

[H*101.]

ALEXANDER BENEDICTUS, PAENTIUS. *Collectiones medicinae*. [Venice, Gregoriis, c. 1493]

[H*806.]

ANDREA, ANTONIUS. *Quaestiones super xii lib. Metaphysicae Aristotelis*. Venice, Strata, 1481, 24 Dec.

[H-Cop.*977.]

AVENZOAR, ABHUMERON. *Theicrisi dahalmodana vahaltadabir; Liber de medicina Averrois, quo dicitur Colliget*. Venice, Gregorius, 1490, 4 Jan.

[H*2186.]

AVERROES CORDUBENSIS. *Colligit; liber de medicina*. See Avenzohar, Abhumeron. *Theicrisi dahalmodana vahaltadabir*.

AVIENUS, RUFUS FESTUS. *Opuscula c. Aratus: phaenomena et Quintus Serenus: Med carmen*. Venice, Strata, 1488, 8 kal. Nov. [Oct. 25].

[H*2224.]

BENEDICTUS, ALEXANDER. See Alexander Benedictus, Paentius.

BRACK, WENCESLAUS. *Vocabularium Archonium nuncupatum*. [Strasburg, M. Schott] 1487.

[H*3702.]

CELSUS, CORNELIUS. *De medicina*. Venice, Rubeus, 1493, 8 Jul.

[H*4837.]

CONCOREGIO, JOHANNES DE. *Opus de aegritudinibus particularibus, flos florum vocatum*. [Pavia] Carcano, 1485.

[H-Cop.*5615.]

DINUS DE GARBO, Florentinus. *Compilatio emplastrorum et unguentorum*. Ferrara, Andreas [Belfortis] 1489, 28 Oct.

[H*6170.]

FICINUS, MARSILIUS. De triplici vita. Venice, 1498.

[H*7066.]

GARBO, DINUS DE. See Dinus de Garbo, Florentinus.

GERSON, JOHANNES. De pollutione nocturna. [Esslingen, Fyner, 1473 ?]

[H*7699.]

GILLES DE CORBEIL. See Aegidius Corboliensis.

GORDON OR GORDONIO, BERNARDUS DE. Practica dicta lilium medicinae. Venice, J. & G. Gregoriis, 1496, 16 Jan.

[H*7799.]

GUAINERIUS, ANTONIUS. Opera medica. Venice, Locatellus, 1497, 16 kal. Mar. [Feb. 14].

[H*8099.]

HIPPOCRATES. Libellus de medicorum astrologia. See Prognosticon.

Lumen anime; liber moralitatum. [Augsburg] Sorg, 1477, 3 Sept.

[H*10329.]

MATHEOLUS DE MATTHIOLIS, PERUSINUS. De memoria. [Rome, Stephan Plannck, c. 1490.]

NICEPHORUS. Logica (with other treatises by Euclid, Nicephorus, Proclus, Aristarchus, Timaeus, Cleonides, Eusebius, Cleomedes, Aristotle, Rhazes, Galen, Alexander Aphrodisaeus & Pselus; edited by Georgius Valla) Venice, Bevilacqua, 1498, ult. Sept.

[H*11748.]

Pharetra, auctoritates et dicta doctorum, philosophorum et poetarum continens. [Strasburg, Mentelin, c. 1472.]

[H 12908.]

Pharetra, auctoritates et dicta doctorum, philosophorum et poetarum continens. [Nuremberg] Crussner [1473-74].

[H*12909.]

PLATEA, FRANCISCUS DE. Opus restitutionum, usurarum et excommunicationum. Venice, J. de Colonia & Manthen, 1477, 22 Jan.

[H 13040.]

PLATINA, BARTHOLOMAEUS. De honesta voluptate et valitudine. Venice, Bernardinus [de Vitalibus] 1408.

[H 13055.]

PLINIUS SECUNDUS, CAIUS. Historia naturalis. Venice, Philippus [Petri] 1481.

[H 13106.]

Prognosticon. Opusculum repertorii Pronosticon in mutationes aeris tam via astrologica

quam metheorologica. Venice, Ratdolt, 1485. Hyppocratis libellus de medicorū astrologia a Petro de abbano in latinū traductus: f.45b-49a.

[H 13393.]

SERENUS SAMMONICUS, QUINTUS. Medicinale carmen. See Avienus, Rufus Festus. Opuscula.

THEOBALDUS, BISHOP. Physiologus de naturis duodecim animalium. Cologne, Quentell [c. 1490].

[H*15471.]

TURISANUS, CARTHUSIENSIS, DE FLORENTIA. Commentum in microtegni Galieni; de Ypostasi tractatus. Venice, Locatellus, 1498, prid. id. Apr. [12].

[H*15684.]

OTHER MEDICAL INCUNABULA IN THE UNIVERSITY LIBRARY

(27 TITLES, 26 VOLUMES)†

ANGLICUS, BARTHOLOMAEUS. See Bartholomaeus Anglicus.

ANGLICUS DE GATISDEN, JOHANNES. Rosa anglica practica medicinae. Pavia [for] Birreta, 1492, 24 Jan.

[H*1108.]

AVICENNA. Canonis libri V translatus a Gerardo Cremonensi et de viribus cordis translatus ab Arnaldo de Villa Nova. Padua, Herbolt, 1476, pt. 1, 4 kal. Oct. [Sept. 28]; pt. 2, prid. id. Dec. [12]; pt. 3, 4 kal. Dec. [Nov. 28]; pt. 5, 5 id. Nov. [9].

[H 2201.]

AVICENNA. De animalibus. [Venice, Gregoriss, c. 1500?]

[H*2220.]

BARTHOLOMAEUS ANGLICUS. De proprietatibus rerum. Cologne, Koelhoff, 1483 [19 Jan.].

[H*2504.]

BEROALDUS, PHILIPPUS, OF BOLOGNA. Annotationes in Commentarios Servii in Virgilium. Florence, Miscominus, 1489.

[H*2945.]

BOETHIUS, ANNIUS. De consolatione philosophiae. Venice, O. de Luna, 1499, 19 Jul.

[H*3408.]

BURLAEUS, GUALTERUS. De vita et moribus Philosophorum et Poetarum. Nuremberg, Friedrich Creussner, 1479, ult. Jun.

[H*4124.]

† Finding list. (N.B. Complete cataloging not yet finished.)

CELSUS, CORNELIUS. *De medicina*. Venice, Pinz. 1497, 6 May. Bound with Avicenna. *De animalibus* . . . [c. 1500?]

[H*4838.]

FASCICULUS TEMPORUM. (By Werner Rolewinck) Venice, Ratdolt, 1480, 24 Nov.

[H*6926.]

FICINUS, MARSILIUS. *Epistolae*. Venice, Capcasa, 1495, vigilia divi Gregorii [Mar. 11].

[H*7059.]

FICINUS, MARSILIUS. *Epistolae*. [Nuremberg] Koberger, 1497, 24 Feb.

[H*7062.]

FIRMICUS MATERNUS, JULIUS. *De nativitatibus*. Venice, Bivilaqua, 1497, 13 Jun.

[H*7121 bis.]

GADDESSEN, JOHANNES. See Anglicus de Gatisden, Johannes.

GEMINIANO, JOHANNES GORUS, DE SANCTO. *Liber de exemplis et similitudinibus rerum*. Basel, Langendorff & Froben, 1499 [Jan. 25].

[H*7546.]

GLANVILLA, ANGLICUS BARTHOLOMAEUS DE. See Bartholomaeus Anglicus.

JAMBlichus, of Chalcis. *De mysteriis Aegyptiorum* [and other tracts] Venice, Aldus, 1497, Sept.

[H*9358.]

JOHN OF GADDESSEN. See Anglicus de Gatisden, Johannes.

LUCRETIUS CARUS, TITUS. *De rerum natura*. Venice, T. de Ragazonibus, 1495, 4 Sept.

[H*10283.]

LUMEN ANIME. [Strasburg, Printer of the 1481 *Legenda aurea*] 1482 [Mar. 22].

[H*10333.]

MAIMONIDES, MOSES. *Aphorismi medici*. Bologna, Plato de Benedictis, 1489, 4 kal. Jun. [May 29].

[H*10524.]

MIRANDULANUS, JOHANNES. See Picus Mirandulanus, Johannes.

PICUS MIRANDULANUS, JOHANNES. *Opera*. Bologna, B. Hectoris, 1496, 20 Mar.

PLINIUS SECUNDUS, CAIUS. *Historia naturalis*. Treviso, Manzolus, 1479, 8 kal. Sept. [Aug. 25].

[H*13092.]

POLITIANUS, ANGELUS. *Opera et alia lectu digna*. Venice, Aldus, 1498, Jul.

[H*13218.]

ROLEWINCK, WERNER. *Fasciculus temporum*. See *Fasciculus temporum*.

SACRO BUSTO, JOHANNES DE. *Sphaera mundi*; Gerard Cremonensis, *Theorica planetarum*. Venice, Renner, 1478.

[H*14108.]

SACRO BUSTO, JOHANNES DE. *Sphaera mundi*; Joh. de Montereio *disputationes contra deliramenta Cremonensia*. [Venice] Ratdolt, 1482, 2 no. Jul. [6].

[H*14110.]

SACRO BUSTO, JOHANNES DE. *Sphaera mundi*. Leipzig. Stöckel, 1499.

[H*14123.]

SACRO BUSTO, JOHANNES DE. *Sphaera mundi*. Venice, Bivilaqua, 1499, 10 kal. Nov. [Oct. 23].

[H*14125.]

SCHADEL, HARTMANN. *Liber chronicarum*. Nuremberg, Koberger, 1493, 12 Jul.

[H*14508.]

SCHADEL, HARTMANN. *Liber chronicarum*. Augsburg, Schensperger, 1497 [Feb. 1].

[H*14509.]

WIRECKER, NIGELLUS. *Brunellus in speculo stultorum*. [Leipzig, Kachelofen, c. 1490.]

[H*16217.]

CRUMMER COLLECTION

(10 Titles, 7 Volumes.)§

ABANO, PETRUS DE. *Consiliator differentiarum philosophorum et praecipue medicorum*. Venice, Johann Herbolt, 1483, 9 Feb. [H*6.]

ALBERTUS MAGNUS, COUNT OF BOLLSTADT, BISHOP OF RATISBON. *De anima libri iii. De intellectu et intelligibili libri ii*. Venice, Gregoriis, 1494, 7 Nov. [Bound with his *De mineralibus libri v* . . . 1495.]

[H*494.]

ALBERTUS MAGNUS, COUNT OF BOLLSTADT, BISHOP OF RATISBON. *De coelo et mundo*. Venice, Gregoriis, 1495, 6 Jul. [Bound with his *De mineralibus libri v* . . . 1495.]

[H*512.]

§ Finding list. (N.B. Complete cataloging not yet finished.)

ALBERTUS MAGNUS, COUNT OF BOLLSTADT,
BISHOP OF RATISBON. De mineralibus libri v.
Venice, J. et G. Gregoriis, 1495, 22 Jun.

[H*522².]

ALBERTUS MAGNUS, COUNT OF BOLLSTADT,
BISHOP OF RATISBON. Libri iv Meteororum.
Venice, Gregoriis, 1494, 25 Feb. [Bound with
his De mineralibus libri v . . . 1495.]

[H*514.]

AQUINO, THOMAS DE. Super primo Senten-
tiarum. Venice, Locatellus, 1498, 5 non. Oct.
[3].

[H*1475.]

AQUINO, THOMAS DE. Super secundo Sen-

tentiarum. Venice, Locatellus, 1498, 11 kal.
Jan. [Dec. 22].

[H*1478.]

PAULUS VENETUS. Aristotelis necnon super
comento Auerois cum dubiis eiusdez. Venice,
Gregorius de Gregoriis, 1499, 23 Apr.

[H*12517.]

PAULUS VENETUS. Expositio Pauli Ueneti
super octo libros Phisicorum. Venice, Gregor-
ius de Gregoriis, 1499, 23 Apr.

[H*12517.]

PETRARCA, FRANCISCUS. Opera. Basel,
Amerbach, 1496.

[H 12749.]

Total Medical Incunabula 75, volumes 67.



[From Nuremberg Chronicle, 1493.]

CHECK LIST OF MEDICAL INCUNABULA IN THE JOHN CRERAR LIBRARY OF CHICAGO*

ARGELLATA, PIETRO DI. [d. 1423.] *Chirurgia*. Venetiis: B. Locatellus [for O. Scot], 1497.

Hain-Cop. 1637. Pellechet 1163. Proctor 5077, types 1, 2, 4, 9. Haebler, types 1, 2, 4, 9. Kristeller 282. 131, [1 blank] fol. 2 col., 66 ll. 2°. 308 × 203 mm. Fol. R6, blank, missing. Flowered initials.

ARTICELLA [Articella.] Venetiis, Baptista de Tortis, 1487.

Hain-Cop. 1870. Voullième: Bonn 105. Proctor 4633, types 3, 5, 7. Haebler, types 3, 5, 7. 150, [4], 151-212 fol. 2 col., 63 ll. 4°. 289 × 207 mm.

ARTICELLA. Venetiis, Philippus Pincius, 1491.

Hain 1871. Proctor 5288. Haebler, types 5, 6, 7. 193, [1] fol. 2 col., 71 ll. 2°. 310 × 212 mm.

AVENZOAR, i.e. 'ABD AL MALIK IBN ZUHR IBN' ABD AL MALIK, ABŪ MARWĀN, known as AVENZOAR [d. 1162]. Theicrisi dahalmodana vahaltadabir, cum Colliget Averrois. Venetiis, J. & G. de Gregoriis, 1490.

Hain *2186. Pellechet 1652. Proctor 4513, types 15, 16, 17, 18. Haebler, types 16, 17, 18? Kristeller 227.

[4], 40, 63, [1] fol. 2 col. 70 ll. 2°. 287 × 209 mm.

AVICENNA, i.e. HUSAIN IBN 'ABD ALLAH, ABŪ 'ALI, called IBN SĪNĀ or AVICENNA [983-1037]. De anima. Pavia, A. Carcanus, n.d. Hain 2219. Proctor 7058, type 4. Haebler, type 4. [51] fol. 2 col. 50 ll. 4°. 288 × 206 mm. Bound with Articella, 1487.

AVICENNA i.e. HUSAIN IBN 'ABD ALLAH, ABU 'ALI, called IBN SĪNĀ or AVICENNA [983-1037]. Liber canonis secundus. Venetiis, Baptista de Tortis, [1492?].

Another issue, without date, of part 2 of Hain *2210, Pellechet 1667, which has date 1492 in colophon.

[66] fol. 2 col. 74 ll. 2°. 421 × 278 mm.

Text surrounded by commentary.

Sig. on fol. [2] reads AAAA.²

BARTHOLOMAEUS ANGLICUS [fl. 1230-1250]. De proprietatibus rerum. [Heidelberg, printer of Lindelbach], 1488.

Hain-Cop. *2507. Proctor 3130, types 1, 4? Haebler, types 4, 6.

[326] fol. 2 col. 50 ll. 4°. 274 × 187 mm.

Rubricated initials.

Sig. A1 wanting; sig. T3 and 6 wanting, and replaced by a duplicate of sig. U2 and 5.

Book 5 largely taken from Isidore of Sevilla's *Etymologiae*; cf. Puschmann's *Handb. d. Geschichte d. Medizin*.

With a few marginal notes in contemporary hand; waterstained; fol. 2 mutilated and mended.

BENEDETTI, ALESSANDRO [1460-1525.] *Collectiones medicinae* [Venetiis: J. & G. de Gregoriis, c. 1493.]

Hain *806. Pellechet 455 "[Venetiis, Aldus, 1497]". Proctor 4533, type 23. Haebler, types 6? [8] fol. 41 ll. 4°. 198 × 142 mm.

BERNARD DE GORDON [fl. 1285-1305]. *Practica dicta Lilium medicine*. Venetiis: J. & G. de Gregoriis, 1496.

Hain *7799. Proctor 4551, types 22?, 27. Haebler, types 15, 27, 30?

[4] fol. without sig., 271, [1] fol. blank. 2 col. 42 ll. 4°. 202 × 150 mm.

Florid initials, partly illuminated. Rubricated.

With ms. notes in contemporary hand, partly cut off in binding.

BEROALDO, FILIPPO [1453-1505]. *Declamatio an orator sit philosopho et medico atponendus*. Bologna, Benedictus Hectoris Faelli, 1497.

Hain-Cop. 2963. Proctor 6635. Pellechet 2218.

4°. 38 leaves. Type 10. Q/u. No catchwords. Spaces for initials, with guide letters.

193 × 143 mm. Vellum.

BRAUNSCHWEIG, HIERONYMUS. *Chirurgia*. Augsburg, H. Schonsperger, 1497.

Hain 4019. Proctor 1790. Haebler, types 4 & 5.

[6], ix-cxxviii fol. fol. 266 × 189 mm. Type Gothic. Woodcuts. 11 fol. of ms. notes at end.

GADDESSEN, JOHN OF, [1280?-1361]. *Rosa anglica*. Papie, [Leonardus Gerla for] G. A. Birreta, 1492.

Hain-Cop. *1108. Proctor 7106, types 1, 2. Haebler, types 1, 2. Kristeller 123.

[4] fol. without sig., 173, [1 blank] fol. 2 col. 54 ll. 2°. 296 × 198 mm. First sig. and sig. y6 wanting. On fol. 1a. col. 1 a florid initial, illuminated; in margin of col. 2 a miniature. Rubricated. Several blank leaves bound in at end of book. On one of them table of contents in ms. by W. Baum.

GUAINERIO, ANTONIO [d. 1445?]. [*Practica medicinae*. Papiae, Antonius de Carcano, 1481.]

Hain-Reichling 8097; College of Physicians, Phila. (These copies have 354 leaves, the first and last blank, with colophon on leaf 352, col. 2. Haebler, type 1. [288] leaves. 2°. 29.5 cm.)

Original wooden boards with back of stamped leather. Modern endpapers. Alphabetical manuscript list of subjects on leaf 288; also a few marginal notes. Leaf 1 wanting.

GUY DE CHAULIAC [129?-136-?]. *Chirurgia*. Venetiis, Simon of Lovere, for A. Torresano of Asula, 1499.

Hain-Cop. *4812. Proctor 5626, types 5, 6. Haebler, type 5, 6.

269, [1] fol. 2 col. 69 ll. 312 × 215 mm.

HERBARIUS patavinus. Passau, J. C. Petri, 1485.

Hain-Copinger *8445. Pellechet 1312. Proctor 2829. 4°. 174 leaves. 148 × 87 mm. Wood-cuts colored by hand.

HIPPOCRATES [460-356 B. C.]. *De medicorum astrologia*. Hippocratis libellum de medicorū astrologia incipit: / a Petro de abbano in latinū traductus. /

*Compiled by J. Christian Bay, Librarian.

[In Prognosticon in mutationes aeris. Venice, 1495, fol. 45b-50a, numb. 45-49.]

HORTUS sanitatis. Mainz, J. Meydenbach, 28 June 1491.

B.M. p. 44. Proctor 160. Hain *8944. Schreiber 4247.

2°. 454 leaves. Numerous woodcuts. 292 × 192 mm. Modern full morocco.

KETHAM, JOANNES DE. Fasciculum medicinae. Venetiis, J. & G. de Gregoriis, 1500.

Hain *9776. Proctor 4562, types 24, 26, 34, 35. Haebler, types 24, 26, 34, 35.

[34] fol. 2 col. 64 ll. 2°. 311 × 208 mm. Full page woodcuts; florid initials. Bibliographical ms. notes by Dr. Baum. Worm eaten.

MONDINO DA LUZZI [d. 1326.] Anatomia. [Lipsiae: Martin Landsberg, 149-].

Hain *11633. Proctor 2994. Haebler, types 1, 2, 34 ll. 4°. 192 × 147 mm.

Sig. A1 and 8 wanting. Missing fol. A8 replaced in ms. by W. Baum; also ms. notes by him.

PETRUS DE ABANO [1250-1315]. [Tractatus de venenis.] Tractat¹ Pe. d'Abano de remediis uenenos. [Romae, Georgius Sachsel Q Bartholomaeus Golsch, 1474.]

Osler, Incunabula medica, 54; Reichling, 1, ascribes this edition to the press of Jo. Phil. Lignamine, Rome, ca. 1473; L. Rosenthal, Kat. 122, ascribes it to the press of Baldassare Azzoguidi, Bologna, 1475. Haebler type 1; Proctor type 1.

[36] leaves. 4°. 21.5 cm. No signatures or catchwords. Leaf 1 and 36 blank.

Leaf 1 wanting; leaves 2-3 also wanting and replaced by photographic reproductions of leaves 1-3* of the 1475 edition (Hain 9, Pellechet 8) from copy in Surgeon General's Library.

PETRUS HISPANUS [1210?-1277]. [Thesaurus pauperum.] Qui in comencia illibro chiamato theforo de poueri || compilato et facto per maestro piero fpano. [Florence, Bartolommeo dei Libri, 1495?]

Perrins (Pollard) 98; Hain-Reichling 8714. Proctor, type 1^B (6257); Haebler, type 1.

[94] leaves. illus. 8°. 16.5 cm. No catchwords. Woodcut on leaf 1^a shows a surgeon's shop. Table of contents on leaves 93^b-94^b.

Leaves 17 and 20 bound between leaves 18 and 19.

PLINIUS SECUNDUS, CAIUS, [23-79]. [Historia naturalis.] caii plynii secundi naturalis historiae Liber .i.-[Tricesimus Septimus et Ultimus]. Venetiis, Nicolaus Jenson, 1472.

Morgan 297; Hain-Copinger *13089; Yale 11. Proctor, type 1^A (4087); Haebler, type 1.

[356] leaves. 2°. 39.5 cm. Neither signatures nor catchwords. Leaf 20 blank.

Dedication of Johannes Andreas Bussi, bishop of Aleria, to Pope Paul II copied from edition of Sweynheym and Pannartz, Rome, 1470.

Leaf 20 (blank) wanting; leaves 160, 171-210, 321-328 wanting and replaced by photographic negatives.

PROGNOSTICON in mutationes aeris. Venice, Erhard Ratdolt, 1485.

Hain 13393, Proctor 4401, Redgrave 56.

4°. 50 leaves, 1 blank. 39 lines, 46 × 100 mm. Types: 5 = 32 title, 76 M49 text. Ornamental initials. 188 × 140 mm. Rubricated. Where spaces have been left for capitals these have been painted in in red.

Fol. 1 missing. Modern full leather. Ms. note on fol. 2a: "Mnrij Benedictobusani."

REGIMEN SANITATISSalernitanum. [Venetiis, Bernardinus Venetus de Vitalibus, ab. 1500.]

Hain-Cop. 13750. Pellechet 1278. Proctor: "not 15th cent."

2 Roman, 1 Gothic type, identical with those used in this printer's edition of 1500, Pellechet 1289.

[82] fol. a-t⁴, u⁶. 29 ll. 4°. 198 × 145 mm.

SACCHI, BARTOLOMEO DE [1421-1481]. De honesta voluptate. Cividale, Gerardus Lisa, 1480.

Hain-Cop. 13052. Proctor 7266. Annmary Brown 389.

4°. 94 leaves, unnumb. 32 lines; 126 × 74 mm. Type 80 M49. Neither signatures nor catchwords.

Spaces for initials with guide letters.

The first book printed at Cividale.

197 × 134 mm. Modern boards. Fol. 56 and 94, latter blank, missing. Initials painted in red or blue in spaces left for them. Illuminated initial on 1^a.

SAVONAROLA, GIOVANNI MICHELE [1390-1462]. Practica. Venetiis, B. Locatellus for O. Scot, 1497.

Hain-Cop. *14484. Proctor 5080, types 1, 2, 9. Haebler, types 1, 2, 9. Kristeller 285.

[6], 275, [1] fol. 2 col., 66 ll. 4°. 308 × 206 mm. Flowered initials.

SAVONAROLA, GIOVANNI MICHELE [1390-1462]. Canonica. Venetiis, B. Locatellus for O. Scot, 1498.

Hain-Cop. 14489. Proctor 5094, types 1, 2. Haebler, types 1, 2. Kristeller 281.

141, [1] fol. 2 col., 65 ll. 4°. 310 × 208 mm. Flowered initials.

Fol. [142] upper right hand corner torn off. Bound with his Practica, 1497.

SERAPION, the elder, i.e. YUHANNA IBN SARAPION, known as SERAPION [fl. 9th century]. Breviarium medicinae. Venice, Rinaldo de Novimagio, 1479.

Hain 14693. Proctor 4434.

4°. 150 leaves, the first blank. 2 col. 199 × 130 mm. 52 lines. Type 77. M99. No catchwords. Spaces for initials, with guide letters. 292 × 205 mm. Fol. 1 missing. Modern boards, with vellum back.

SERAPION, the elder, i.e. YUHANNĀ IBN SARAPION, known as SERAPION, fl 9th century. Practica. Venetiis, B. Locatellus for O. Scot, 1497.

Hain-Cop. *14695. Proctor 5084, types 1, 2, 9. Haebler, types 1, 2, 9. Kristeller 285.

211 fol. 2 col. 66 ll. 4°. florid initials. 295 × 200 mm. Last leaf, blank, wanting.

SERENUS SAMMONICUS, QUINTUS, d. 212. Medicinale carmen. 149-?

4°. Neither signatures nor catchwords. 20 leaves unnumb. 25 lines, 144 × 96 mm. Type 114 Qu/ and Q/Q. Space of 2 lines, 6 letters wide, at beginning of text.

Also ascribed to son of Serenus, Quintus Serenus Sammonicus the younger.

Probably printed in Italy, from ms. greatly differing from that used in Hain 14698. Poorly printed, many misprints. Type rather worn.

20 7 × 151 mm. Modern boards.



[From Schenckius: *Observationum Medicarum*, Francofurti, 1609.]

EDITORIALS

MARCELLO MALPIGHI

IT is a great pity and matter for wonderment that there is no adequate life in English of the great Italian anatomist and physiologist whose works owed their publication chiefly to the Royal Society of London and to whose labors we owe the completion of Harvey's great discovery, by the demonstration of the capillary circulation.

W. G. MacCallum¹ published some years ago an interesting account of some aspects of his work and J. M. Hayman² has recently published a translation of his description of the structure of the kidney. In a recent issue of *Science*³ there is a most delightful article entitled "Malpighi as Anatomist," by Professor A. W. Meyer, of Leland Stanford University, written in connection with the celebration of the Tercentenary of Malpighi's birth, which coincided with the worldwide celebration of the Tercentenary of the publication of Harvey's "De Motu Cordis." The time in which Malpighi lived is marked by the most wonderful developments in the science of anatomy and physiology. Meyer enumerates among Malpighi's "approximate contemporaries" the names of Bartholin, Bellini, Brunner, Cowper, du Hamel, de Graef, Gall, Glisson, Highmore, Meibom, Merck, Peyer, Riolan, Rivinus, Ruysch, Schneider, Steno, Swammerdam, Sylvius, Tulp,

Wharton, Willis and Wirsung, and more might be added. But the work and fame of all these men whose names are so familiar to us are far surpassed by Malpighi who not only studied one but many organs and structures and in most of those which he studied he entirely revised the preconceptions concerning them and opened the way to our modern anatomical and physiological ideas. He was thoroughly modern in the way in which he pursued his researches and as Meyer says "was an experimentalist," who did not content himself merely with observations on the dead, but used both vertebrates and invertebrates as well as plants, and felt that there was a kinship among all living creatures, so that one could learn regarding the higher from an examination of the lower forms, and Meyer quotes Sir Michael Foster's statement that his studies of embryology left that science where it remained until the nineteenth century. Meyer points out that many of Malpighi's discoveries would have been impossible had he not practiced vivisection: "It was impossible to see the natural motion of the blood except in living beings, and it was while observing the lungs and other organs of frogs, hedgehogs and turtles, under magnification, that Malpighi discovered the existence of tubular connections between the arteries and veins which we now know as capillaries, and though he mistook the nature of

¹ *Johns Hopkins Hosp. Bull.*, 17:275, 1905.

² *Ann. M. Hist.*, 7:37, 1925.

³ *Science*, 72: No. 1862, Sept. 5, 1930.

the red blood corpuscles and thought they were fat globules, nevertheless he undoubtedly saw and described them. Knowledge of the anatomy and physiology of the kidneys remained practically as Malpighi left it until the investigation of Bowman and Henle, two hundred years later. Malpighi demonstrated that the lingual papillae were true sense organs and not simply glands which secreted moisture. The true structure of the skin was also first demonstrated by him, and he showed that the spleen was a ductless gland and that it did not send any secretion to the stomach. He first showed the spiral arrangement of the muscles of the ventricular walls of the heart." Meyer gives a long list of various topics which Malpighi investigated and to all of which he added some knowledge. It is true he made mistakes. He thought the gray matter of the brain was a glandular structure, and that the spinal nerves were hollow tubes, but the more we consider the great contributions which he made and the new conceptions which he brought forward, the greater is our wonder at his achievements.

There is scope for an authoritative record in English of the work of one of the great research workers of all time, and one whose blameless and self-sacrificing nature would lend a great charm to the story.

THE JOHNS HOPKINS UNIVERSITY
SCHOOL OF MEDICINE
INSTITUTE OF THE
HISTORY OF MEDICINE

The following lectures will be given during the academic year 1930-1931:

I. SIR D'ARCY POWER, of London, England, Visiting Lecturer in the History of Medicine.

Six lectures, on November 19, 25, December 2, 3, 10, 17 [1930], 5 p. m.

II. DR. WILLIAM H. WELCH, Professor of the History of Medicine.

Lectures or conferences on selected topics, on Wednesdays, 5-6 p. m., during January, February and March, beginning January 7, 1931.

III. DR. FIELDING H. GARRISON, Resident Lecturer in the History of Medicine.

A seminar course on Medical Literature and Bibliography, on Thursdays, 5-6 p. m., beginning October 16, 1930, and ending January 22, 1931.

Lectures on Phases of National Medicine:

1. Russian Medicine: The Old Régime
2. Russian Medicine: The Soviet
3. Spanish Medicine
4. Scandinavian Medicine
5. Italian Medicine
6. Germanic Medicine
7. Medicine in France

These lectures will be given on Thursdays, 5-6 p. m., beginning March 26, 1931, and ending May 7, 1931.

IV. DR. STEPHEN D'IRSAY, Associate in the History of Medicine.

Dr. d'Irsay will give at least one seminar course for advanced students (History of Physiology), as well as lectures on the History of Universities, and a course on Ancient and Mediaeval Scientific Text-books.

Hours will be announced later.

V. DR. JOHN RATHBONE OLIVER, Associate in the History of Medicine.

Dr. Oliver will give an introductory course to the History of Medicine, on Tuesdays and Fridays, 3-4 p. m., during the second, third and fourth quarters of the academic year. The first lecture will be given on December 5, 1930.

These lectures are intended for students who have had no previous training in Medical History and who desire a brief summary of the entire field, from the medicine of earliest times down to medicine of the present day. These lectures will be illustrated so far as possible by lantern slides and by demonstrations of valuable medical works, photostats of manuscripts, etc.



BOOK REVIEWS

HISTORY OF HAITIAN MEDICINE. By Robert P. Parsons, M.D. New York, Paul B. Hoeber, Inc., 1930.

The unknown has a charm for most of us and to the majority of readers of this book the island of Haiti is probably unfamiliar ground. The story which Dr. Parsons tells is a fascinating one and in its later stages reflects great credit on American medicine. The medical history of Haiti falls into three periods: The French occupation in the 17th and 18th centuries, the independent period from 1804 to 1915, and the American occupation since 1915. Following the Spanish occupation the Carib Indians were soon exterminated and the importation of African slaves was begun (1503). These were brought from many parts of Africa and brought many diseases with them as well as Voodooism. Yaws and possibly yellow fever were among the importations. Malaria and smallpox were common. The great prevalence of intestinal parasites was recognized by the French physicians. In 1803 the French Army was practically destroyed by yellow fever.

With 1804 and the beginning of the period of independence, it may be said that medicine ceased to exist, as the white inhabitants were almost exterminated. Christophe had a wider vision and gradually medical men were brought to the island but little was done in the way of proper medical service. Herb doctors and charlatans did most of the practice. Attempts were made to improve the hospitals and to establish a medical school but the history of these efforts is largely that of a series of failures with occasional improvements.

Since the American occupation in 1915, there has been much accomplished,

the account of which is given by Dr. Parsons in a most interesting way. The various means by which the health problems were attacked, the difficulties and the successes are well described. Special notice is given to the work on yaws with a discussion of its identity or not with syphilis. Mention is made of difficulties likely to arise when the American occupation ends, especially to public health.

Dr. Parsons has written a most interesting, readable and instructive book which throws much light on the problem of medicine and public health in an isolated community with a turbulent political history.

THOMAS MCCRAE.

A HISTORY OF THE CALIFORNIA ACADEMY OF MEDICINE, 1870-1930. By J. Marion Read. San Francisco, California Academy of Medicine, 1930.

This is the record of a society which has done much to elevate professional standards on the Pacific Coast. Founded in 1870 as the San Francisco Medical Benevolent Society, the name was changed to the California Academy of Medicine in 1891. Dr. Read points out that in 1871 there were no less than 81 benevolent societies in the city when the population of San Francisco only amounted to 150,000 souls and it is probable that the physicians did not wish to be outdone in manifesting their benevolent spirit. Its objects were stated to be "for the protection and relief of deserving physicians and their families who may suffer from sickness and want and to promote kindly professional and social intercourse among themselves and the profession at large." Some months later the Society declared its intentions to collect a library, establish a museum,

publish a medical journal or monographs on medical subjects and report such cases as might be brought before the Society for discussion.

A county medical society was already in existence in San Francisco in 1870, and it is curious that the leading men of San Francisco's two medical schools, the Medical College of the Pacific and the Toland Medical College, were not members of the new organization. Dr. Read gives interesting short biographies of the founders and early members of the Society. Many of these had received excellent training, several of them having graduated from the best medical schools in Great Britain, and a number having pursued post-graduate studies in Paris. All of them had received the degree of M.D. from some recognized medical school. For many years the Society flourished. It had acquired a home and was prospering materially and scientifically. In 1891 the name was changed as stated already to the California Academy of Medicine. In 1890 it fell into financial difficulties, had to give up its quarters and for some years it met in the homes of the members. Nevertheless its meetings continued to be well attended and the contributions read at them were of high character. In 1913 the Academy had fallen upon evil times. There was a lack of interest on the part of the members and a corresponding falling off of scientific contributions to its meetings. The following year a thorough reorganization of the Academy with the inauguration of some new ideas as to its meetings and general policy set it once more upon its feet. It adopted the practice of bringing distinguished physicians to speak on their special subjects four or five times in the course of the year. The meetings at which they speak are preceded by a dinner which affords an opportunity for familiar intercourse amongst the members. This policy has proved most successful and the Academy is now flourishing both in the number of interested members and in its finances. Above

all it is doing a great work for the community in which it lives. This handsome volume, beautifully printed and well written is an interesting record of which the Academy may well be proud.

FRANCIS R. PACKARD.

MEDICINE IN VIRGINIA IN THE SEVENTEENTH CENTURY. By Wyndham B. Blanton, M.D. Richmond. William Byrd Press, Inc., 1930.

This is a delightful book and a most valuable contribution to the medical history of this country. It owes its inception to a suggestion made in a presidential address by Dr. J. W. Preston to the Medical Society of Virginia, that a historical committee be appointed to consider the question of publishing a history of medicine in that state. The present volume is the result of the work of that committee and it will stand as a testament to their zeal and ability. The members were Drs. Frederick Rinker, Beverley R. Tucker and Wyndham B. Blanton, the last-named the chairman and writer of the book in hand. Every aspect of medicine in the affairs of the colony is taken up and thoroughly considered. An especially noteworthy feature is the obvious care with which the author has gone to original sources to authenticate his statements. This is noteworthy because in dealing with the history of medicine in the colonies it has been altogether too customary to merely repeat statements made by earlier writers without making any effort to search out their veracity. When Thacher, Toner and some other writers on colonial medical history published their works historical research was on a very different basis from what it is at present. Since their time so much effort has been directed towards the study of colonial archives and consequently so much material unknown to them has been uncovered that we know that though they were honest and capable investigators in many instances they erred from lack of facilities. Dr. Blanton has made the best use of every available source of information.

Chapter I, "Medicine under the London Company" reveals much that is not generally known about the efforts made to provide for the health of the early settlers of Virginia. There were some outstanding figures among the Company's surgeons, notably Dr. Lawrence Bohun and his immediate successor John Pott. Dr. Blanton writes most delightfully of these two worthies, who suffered many trials and tribulations in fulfilling their duties. The second chapter, "Epidemic Diseases" covers very fully this subject so important in all the colonies from their establishment. When we consider the confusion existing in the diagnosis of typhoid fever and malaria down to the discovery of the malarial parasite we are not surprised to find the same confusion rendering it difficult in many cases to ascertain whether some of the prevalent diseases in early Virginia were typhoid or malarial in origin. During the early settlement there was such a heavy mortality among the colonists that the increase in population was very slow. Among the causes of this mortality Blanton places beri-beri, a dietary deficiency disease, which though not known by that name was undoubtedly the cause of many of the deaths among the badly fed, half-starved settlers.

Medical education which is dealt with in Chapter III was entirely by the apprenticeship system, many of the apprentices being really indentured servants. In Chapter IV the "simples" or medicinal plants of Virginia, and their importance in medicine and commerce are thoroughly considered. The two following chapters are concerned with "Medical Practice" and "Housing the Sick." Under the latter head Blanton shows from contemporary accounts that in 1612 when the town of Henricopolis was founded near the falls of the James River, the earliest hospital of which we have a record in the English colonies was built; "Here they were building also an Hospital with fourscore lodgings (and beds already sent to furnish them) for the sicke and lame, with

keepers to attend them for their comfort and recoverie." Nothing more is known of this hospital which doubtless was destroyed in the fire which accompanied the destruction of Henricopolis and the massacre of its inhabitants in 1622.

"Women in Medicine" tells of the early midwife, that very necessary accessory in every growing colony. Then follow chapters on "The Private Life of Physicians," "The Public Life of Physicians," "Vocations and Avocations," "Medical Fees," "Medical Legislation," and finally a list of 17th century Virginia physicians. A number of appropriate illustrations, an excellent bibliography and an adequate index conclude this most interesting and valuable work. There is a promise that this volume will be succeeded by others dealing with the medical history of Virginia in the succeeding centuries. Let us hope this promise will be fulfilled and that the subsequent volumes will be as thoroughly satisfactory as this one.

FRANCIS R. PACKARD.

PLARR'S LIVES OF THE FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND. Revised by Sir D'Arcy Power, K.B.E. (Mil.), F.R.C.S., Eng. Hon. Librarian Royal College of Surgeons, with the assistance of W. G. Spencer, F.R.C.S., Eng., and Prof. G. E. Gask, F.R.C.S., Eng. Thelvall Thomas Memorial. 2 vols. Printed and Published for the Royal College of Surgeons. Bristol, John Wright and Sons; London: Simpkin Marshall, Ltd., 1930.

It is well known that from 1540 until 1745 the surgeons and the barbers of England were united in a single guild. In 1745 this union was dissolved and its members formed into two distinct Companies, one of the Barbers and the other of the Surgeons. In the early years of the nineteenth century the surgeons were incorporated as the Royal College of Surgeons in London. It was not until 1843 that by a new charter the name of the College was changed to the Royal College of Surgeons of England, and an order of Fellows created in its member-

ship. Thus the present work only gives biographies of surgeons who flourished in 1843 or subsequently, and, of course, does not deal with such Fellows as are yet alive. Hence it is not as comprehensive a work as Munk's "Roll of the Royal College of Physicians," which contains the biographies of the Fellows of that body from its founder Thomas Linacre, down to the date of publication. Nevertheless this work requires two bulky volumes to contain all the biographies which it takes up. Its publication was rendered possible by a bequest of £5,000, which Thelwall Thomas, F.R.C.S., of Liverpool, who had been a member of its Council, and no better or more appropriate use could have been made of the gift of one who was interested in its affairs.

The actual compilation of the biographies was begun in 1912, by Mr. Victor G. Plaar, who was Librarian of the Royal College of Surgeons of England from 1897 until his death in 1929, at the suggestion of Sir John Bland Sutton. Plaar was a literateur and poet, and a worthy successor of James Black Bailey in the office of Librarian. He wrote several works bearing on the activities of the College: "List of Lecturers and Lectures at the Royal College of Surgeons of England 1810-1900"; "Catalogue of the Collection of Portraits and Relics mainly illustrative of the History of the College and its Former Presidents," exhibited at the College, July 25-27, 1900, and a "Catalogue of Manuscripts in the Library of the Royal College of Surgeons of England." The last named was noticed in the editorial columns of the *ANNALS*.

These publications are sufficient to prove his great interest in and profound knowledge of the history of the institution he so faithfully served. The material which he accumulated was not suitably arranged for publication and was accordingly placed in the hands of Sir D'Arcy Power, Mr. W. G. Spencer and Professor G. E. Gask to be prepared for that purpose. It is needless to state that their task has been most admirably

performed. Many of those whose biographies appear were personally known to the editors and the result has been a vivid series of word-portraits of the greatest value. It is hard to realize that so many of the men whose genius and ability were so manifested in the wonderful organization of the medical service of the British Army during the Great War, have passed into history. Sir Arthur Sloggett, Sir Anthony Bowlby and Sir William Thorburn, are a few especially deserving of mention. The biographies are not signed so that it is impossible to know the individual authors but their standard of excellence is so high that this omission is not noticeable. Each biography though succinct is yet well written and pleasing to read. The existence and location of portraits of the prominent Fellows are given, which to the reviewer's mind is much better than increasing the bulk of the work with reproductions. This book is not only an invaluable work of reference but a delightful piece of literature on the history of the last hundred years of English surgery.

FRANCIS R. PACKARD.

STALKERS OF PESTILENCE. The Story of Man's Ideas of Infection. By Wade W. Oliver, M.D. New York, Paul B. Hoeber, Inc., 1930.

This book contains many matters of historical interest but often wanders from the history of man's ideas of infection and is not confined to the subject of its title. The development of our knowledge of infectious diseases is traced from early times to the present. It is a sad story in many ways and one that should make us humble. Many of the ideas of the origin and causes of pestilences seem so absurd to us that we wonder how they could ever have been held. But it needs very little observation to discover how deeply fixed some of the ancient superstitions regarding disease are in many minds today. It is well for us not to be too confident of all the views held at present for the future will sweep some of them into the same repository

as many of the older views which Dr. Oliver has discussed.

There is reference to many outstanding figures in the history of medicine but not all were concerned particularly with pestilence. The author refers to the influence of disease on the destiny of mankind but does not elaborate the subject which is a fascinating one. It is a nice question for debate whether the "Black Death" of the fourteenth century was not one of the events of history for which we have cause to be thankful today. The story of the controversy regarding spontaneous generation is well told. It illustrates the credulity of human nature. An error is made in the statement that Sir Almroth Wright inoculated the entire British forces in the South African war against typhoid fever; only a small percentage received preventive inoculation.

This is an interesting book and should excite the interest of the reader so that he will consult more elaborate works, as Dr. Theobald Smith suggests in the preface which he has contributed.

THOMAS McCRAE.

THE CANDIRÚ. The only Vertebrate Parasite of Man. By Eugene Willis Gudger, PH.D., Bibliographer and Associate in Ichthyology, American Museum of Natural History, New York City. With a Foreword by Aldred Scott Warthin, PH.D., LL.D., Professor of Pathology and Director of the Pathological Laboratories in the University of Michigan, Ann Arbor. 18 illus. New York, Paul B. Hoeber, Inc., 1930.

This little book is a fascinating and erudite study from the standpoint of the naturalist, ethnologist and physician, of a most curious problem in natural history. For many years tales have been current of a mysterious fish, chiefly found in the waters of the Amazon and its tributary rivers, which had the peculiar habit of infesting the male and female genitalia of those who entered its native waters. Few qualified observers had ever reported actual personal observations of cases of this nature, and there was

much confusion as to the identity of the fish, several of the early observers differing materially in their descriptions, and in the stories related by travellers it is evident that the actions of ferocious small fish called Piranha, were often confused with those of the Candirú, the small fish which Gudger has proved guilty of being an endoparasite of the genitalia. The Piranha inhabiting the same waters as the Candirú, inflicts severe bites on bathers, there being a number of well authenticated cases in which the penis has been amputated by it, but it does not enter the cavities of the genitalia, as does the Candirú, and therefore leaves the latter in undisturbed possession of the title, "The only vertebrate parasite of man." Gudger reviews the work of various ichthyologists on South American fishes, particularly that of the late Professor Eigenmann, and he concludes that the name Candirú is applied by the natives to several genera and species of the Pygidiidae, a family of South American catfish. The particular ones known as Candirú have the opercle beset with patches of spines. These are directed backwards in such a manner that after the fish has entered its host they act as hooks in the mucous membrane, to prevent the withdrawal of the parasite.

The natives where the Candirú abounds are in great dread of them and caution white strangers against the danger of bathing in infested waters. To protect themselves they either constrict the foreskin with a ligature across the urethral opening, or wear a protector, made of fiber or bark. The women use similar protectors. Dr. Gudger gives several illustrations of these protective devices. From an ethnological point of view it is interesting to find such appliances sometimes regarded as forming a part of a ritual.

A curious feature of the Candirú is that he is generally reputed to be urinophilous and that his penetration of the genitalia is not due to a propensity

to hide in dark places so much as to a tropism to urine. The natives particularly warn strangers against urinating while in the water as they say the urine will attract the Candirú to the urethra of the person passing it. Eigenmann believed that some fish known as Candirú undoubtedly had such a tropism, and Gudger quotes his speaking of "the urinophilous Vandellinae," and he gave the name urinophilous erythrurus to a species of Pygidiidae, which he described. Gudger thinks from the evidence it is probable but not proved that at least some Candirú are urinophilous. A very interesting chapter is taken up with accounts of cases of penetration of the urethra or vagina by the Candirú and of the methods employed to get rid of it. In one instance the fish had penetrated as far as the bladder rendering a suprapubic operation necessary.

In the Foreword Dr. Warthin tells with much grace how his interest in the Candirú had been aroused some years ago after hearing of it from Professor Eigenmann, because he considered it the "only vertebrate parasite of man." He referred to it as such in his lectures and had in his mind the idea of pursuing further study of the question. When he heard of Dr. Gudger's study he felt that the matter would be studied with scientific care and duly presented by one with the highest qualifications for the task. The reader will undoubtedly lay down this book with the feeling that Dr. Warthin was right.

FRANCIS R. PACKARD.

A CENTURY WITH THE NORFOLK NAVAL HOSPITAL, 1830-1930. A STORY OF THE OLDEST NAVAL HOSPITAL, THE MEDICAL DEPARTMENT OF THE NAVY AND THE PROGRESS OF MEDICINE THROUGH THE PAST ONE HUNDRED YEARS. By Richmond C. Holcomb, M.D., F.A.C.S., Capt., M. C., U. S. N. Printcraft Publ. Co., Portsmouth, Va., 1930.

Captain Holcomb has completed in this book an exceedingly long job. Also a very, very wide one. The long subtitle,

suggesting as it does the diverse trails of history along which the reader will be led, is only a hint at the number and diversity and size of the subjects covered. And yet, however winding the paths, however far we wander along any of them, the author manages always to make them lead eventually back to the Norfolk Hospital.

This reviewer had certain misgivings at some points of the journey; he even lost hope of ever seeing the hospital again, but he found nothing dull along these circuitous routes, each one of which brought him safely back to this hundred year old hospital at Norfolk.

The hospital has lived through, has been largely influenced by and has played a considerable part in many kinds and chapters of history: American, Virginian, Norfolkian, naval, medical—all these phases of history are related to the story—a pretty distant relationship in some instances perhaps, but it is there and the author demonstrates it rather clearly.

As to the pattern of the book, the story begins in 1636, the first chapter leading us to 1830 with a discussion of the status of land titles in that period. There is a good deal of incidental material here on the early history of America and Virginia and Norfolk, the history of tobacco as a medium of exchange, and the history of the 80 acre plot which was acquired in 1930 and on which the hospital now stands.

Chapter II, entitled "Old Fort Nelson, 1774-1827," includes some information on the drinking customs of the period, some Revolution history as it affected Norfolk, some more Norfolkian history, and an account of Fort Nelson (on the site of which the hospital was built).

Chapter III, "The Medical Corps, U. S. Navy, 1775-1830," contains much that should interest naval medical officers; possibly others. There is a splendid account of early customs, conditions, traditions in the corps, the part its members played in the Revolution, in

the wars with the Barbary States and in the War of 1812. Here, as in most of the chapters, there is much written on American Naval history and numerous and interesting sidelights on the history of American medicine of the period. There is some excellent biographical material on such men as Barton, Heerman, Ridgely, Cowdery, and Usher Parsons. Of particular historical value and interest in this chapter is a list of thirty-four naval medical officers who served in the War of 1812 and who were mentioned in Resolutions of Congress.

The chapter on the Mexican War contains some very interesting biographical material on three illustrious medical officers of the period, C. D. Maxwell, Elisha Kent Kane and Wm. Maxwell Wood.

The chapter on "The Yellow Fever Epidemic of 1855" contains many sidelights on the history of yellow fever, together with an illuminating and detailed account of this particular epidemic and of the heroic work of the Norfolk Naval Hospital during the epidemic.

A chapter entitled "Through the Spanish War, 1898-1907" contains much about the condition of the medical corps of the period, some hospital-ship history, an account of the establishment of the hospital corps, a considerable bit of naval history and much about the Norfolk hospital, with an engaging description of the oyster shell roads through the hospital grounds. In this chapter there appears another section of the history of yellow fever, this including an account of Walter Reed's epochal experiments in Cuba.

The remaining chapters (Remodeling the Structure, 1907-1917; Through the Great War, 1909-1929; The Burying Ground, 1830-1928; The Hospital Corps School; At the Eve of One Hundred Years, 1930; To Them Who Build) are limited more strictly to matters of the Navy Medical Department and of the Norfolk hospital. This includes some splendid discussion on hospital ships, a

discussion of research work performed by naval medical officers, an authentic and quite comprehensive record of medical department activities during the late war, and an account of the development of the program of hospitalization of Veterans' Bureau patients in naval hospitals.

Not the least important feature of the book is the well-chosen collection of 42 illustrations. These include several interesting old prints, photographs and maps.

Besides being filled with entertaining reading, this volume represents some years of careful search and compilation of historical material, and thus is of particular value as a reliable reference.

ROBERT P. PARSONS.

THOMAS SAY. *EARLY AMERICAN NATURALIST*. By Harry B. Weiss and Grace M. Ziegler. Foreword by L. O. Howard. 27 illus. Springfield, Ill., Charles C. Thomas, 1931.

This is a delightful account of the life and achievements of one of the most accomplished of the interesting group of men who laid the foundations of the study of natural science in this country. Contemporary of Audubon, Alexander Wilson, Charles Lucien Bonaparte, Rafinesque, and Benjamin Silliman, Thomas Say was on terms of personal intimacy with most of the scientists of his day in America. He was a great grandson of the famous John Bartram and his early nature studies were encouraged by his great uncle William Bartram, author of the well-known book of travels in the Southern States. Say started his career as a druggist but failed in business when but twenty-five years old, and thenceforth devoted his whole life to the study of natural history. He went as zoologist on two government exploring expeditions to the West and made the most of his opportunities to study not only the flora and fauna but also the Indians of that then little known country. In 1812 he was one of the founders of the Philadelphia Academy of Natural Sciences,

and in subsequent years one of the most constant contributors to its transactions. In 1819 he published the first article on American conchology by an American author, and began the publication of his "American Entomology." He was for some years Curator of the American Philosophical Society and Professor of Natural History and Geology in the University of Pennsylvania. Many of his papers are of permanent value and are yet referred to. One of the most interesting parts of his life is that dealing with the Society of New Harmony, Robert Owen's famous community in Indiana. Among Say's friends in Philadelphia was William Maclure, a very wealthy man, a geologist, and chief financial support of the Philadelphia Academy of Natural Sciences. Owen interested Maclure in his project to such an extent that he put \$150,000 into the scheme, and went out to New Harmony to live, taking along with him Say and some other scientific men. The Authors give a most interesting account of the whole scheme, and of Say's life in the community, where he married and remained until his death in 1834. One of the best features of this book is the manner in which the authors have managed to bring forth the picture of the scientific and literary life of this country in the early nineteenth century. It is refreshing to find a just appreciation of the really quite remarkable culture which flourished in this country during an epoch at which many persons seem to take delight in casting aspersions. This book will go far towards correcting such misrepresentations, not by any apparent effort on the part of the Authors but by a perusal of their well-arranged account of the many intellectual activities which were being carried on by men of the highest type.

LA VIE D'AMBROISE PARÉ (CHIRURGIEN DU ROY, ÉCRIVAIN). By Dr. Leon Michelet. Preface by Dr. Victor Pauchet. Paris, Librairie Les Français, 1930.

Around the life of a great figure such as Ambroise Paré many legends spring up and in the course of time it becomes increasingly difficult to separate the true from the false. In 1840 Malgaigne undertook this task and to his great edition of Paré's works he prefaced a "Life of Paré" which remains the standard biography of the great surgeon. Malgaigne's work was supplemented in 1884 by Le Paulmier's "Ambroise Paré" which contains many legal documents and records unknown to Malgaigne, and settles most satisfactorily many of the disputed facts concerning Paré's life. The present volume is one of those imaginative biographies so much in vogue just now, in which all the fictions and legends concerning a great man are mixed up with ascertained facts in such a way that it is impossible for the reader, unless a student of the subject's career, to disentangle the true from the false. Thus Malgaigne has shown that we know nothing of Paré's training for his surgical career until his residence at the Hôtel Dieu at Paris, but that from internal evidences in his writings he probably worked for some time with his older brother, who was a surgeon. Michelet incorporates in his book the legends about his apprenticeship to a surgeon named Vialot, and other stories absolutely rejected by Malgaigne. He puts conversations into the mouth of Paré, and even gives his thoughts and methods of reasoning. Although biographies such as this must appeal to some readers or they would surely not be published so frequently, we cannot but regret that a biographer who is obviously thoroughly acquainted with his subject, versed in his works, and familiar with the mass of literature concerning him, should write a book in which fiction and fact are so intermingled, especially after they had been disentangled only after many years of patient labor by previous workers. For those who enjoy reading fictitious biography the book will have its appeal, but for those who are really

interested in the life of a great man it is somewhat of a shock.

The preface by Dr. Victor Pauchet is composed chiefly of a study of the characteristics of Ambroise Paré, based on an analysis of his handwriting by Dr. Camille Streletski, his phrenology judged from his portraits by Dr. Paul Nyssens, and his endocrine status also studied from his portraits, by Dr. Leopold Lévi. According to the latter Paré's physiognomy indicates that he enjoyed or suffered from hyperpituitarism, hyperthyroidism and hypergenitalism. Whether his writings bear out these findings, the reader can judge for himself.

FRANCIS R. PACKARD.

IL Y A CENT ANS. PARIS MÉDICAL EN 1830.

By Marcel Fosseyeux. Paris, Librairie le François, 1930.

We doubt if the changing physiognomy of any great city has been so copiously and minutely written of as that of Paris. Every street, place, and building of historic, artistic or literary interest has been described by many writers, and now we have in this little book an attempt to reconstruct medical Paris at the time when Paris held the medical supremacy of the world. The mere mention of a few of the names of the great physicians and surgeons who figure in M. Fosseyeux's book will be sufficient: among the physicians Laë nec, Broussais, Alibert and

Magendie, among the surgeons Dupuytren, Larrey, Velpeau and Ricord. Louis was just acquiring the great popularity which led so many young Americans, W. W. Gerhard, Jackson, Bowditch, O. W. Holmes, etc., to take his special courses, and extended his influence for many years over the teaching and work of the medical schools and hospitals of the United States. M. Fosseyeux describes the hospitals in which these young Americans walked the wards, watched operations and attended clinical conferences, under as able a group of teachers as has ever been gathered together at any one time and place. Many of these institutions can yet be visited and in some of them it is still possible to visualize some of the surroundings in which our medical ancestors acquired the ideas with which they laid the foundations of American medicine. He also tells us not only where but how the prominent physicians and surgeons of Paris lived, relates many anecdotes of interest concerning their private as well as their professional careers. Any American physician visiting Paris would certainly add greatly to the interest of his stay if he would acquire this handy little volume and use it as a guide. It contains a number of pertinent illustrations and an index of the names of the physicians who are written of.



NEW SERIES · VOL. 3

NO. 2 · MARCH

1931

ANNALS OF MEDICAL HISTORY



FRANCIS R. PACKARD, M.D., EDITOR (PHILADELPHIA)
PUBLISHED BIMONTHLY BY PAUL B. HOEBER, ESQ.
SEVENTY-SIX FIFTH AVENUE, NEW YORK, N.Y.

TRUDEAU
BARATORUM

Entered as second class mailing June 2, 1911, at the post office at New York, N. Y., under the Act of March 3, 1879.

Volume subscription, \$10.00. Single numbers, \$5.00.

ANNALS OF MEDICAL HISTORY

Editor: FRANCIS R. PACKARD, M.D., Philadelphia

CONTENTS OF NEW SERIES, VOLUME ONE, 1929

THOMSON, Semaines Life of a Physician in the 13th Century; JOHNSON, William Foster Memorial Lecture, Introductory; COURT, Development of the Harvey Circulation; BURGESS, Appreciation of the Medical Profession and the Divine Origin of Medicine; CHANCE, Spinal Liquid; KREMERBAUM, Bibliographical Material Pertaining to the Discovery of the Circulation of the Blood; WOOD, Martin Luther WOOD, Historical Epoch; HARVEY, History of Hemostasis; MILLER, William Beaumont and His Book; BORG, Dr. Jansen and His Medical Dictionary; MOORE, Gabriel Herrera de Raposo; RODRIGUEZ, Garcia de Ossa; ROSE, Arnold Adolf Bartheld; TOOMBS, First General Medical Treatise Published in the Western Hemisphere; PRACHEY, John Fennell; POWEN, Memorial Group of the Harvey Family; KREMERBAUM, Bash Oliver—Doctor and Biologist; WOOD, Julius Millinger; ROBERTSON, "Case of Faith" and its Author, Sir Thomas Blount; ADLER, Albrecht von Gersdorff; PARSONS, Haines Medicine; HAMMERT, Anatomical Knowledge of the Ancient Hindus; GUDWIN, Illustrations of Comparative Osteology; BATES, Charles Edward James

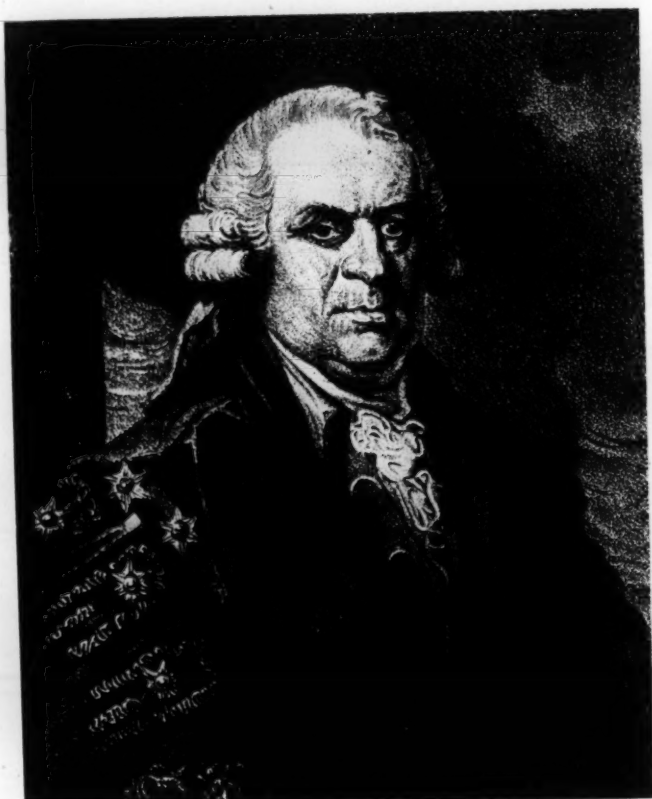
WALSH, Date of Galen's Birth; FRYFIELD, A Fossil, Rickety, Gasping, Sniggering, Sniggering Tomfool; MILLER, Diseases of Ancient Men; OLIVIERO, Copy of Jansen Note Book; STRECKER, Reminiscences from the Early Days of the Pennsylvania Hospital; WILSON, Loring; GARRISON, Brief Note on Medical History; FROTHINGHAM, Epilepsy in the Light of History; POOL & MCGOWAN, Surgery at the New York Hospital One Hundred Years Ago; ROLLISTON, Samuel Johnson's Medical Experiences; MACPHEAR, Evolution and Life; MIDDLETON, Philip Syng Physick; TAYLOR, S. West Mitchell; WAGNER, Semaines Depicting a Posterior Superior Dislocation of the Hip; WHEEL, David Ramsey; WARDEN, Incidents in Early South Carolina Medicine; TOWN, Medical Physician; FRIEDENWALD, Manuscript Copies of the Medical Works of Isaac Judah; Diploma of a Jewish Graduate of Medicine of the University of Padua in 1691; BATSCHKE, Hermannus Brunschwig; STREYCK, Origins and Significance of the Public Health Movement in the United States; FLEISCHWILL, Ninian Pickney, M.D.; MOORE, Surgery in Pre-Columbian Peru.

CONTENTS OF NEW SERIES, VOLUME TWO, 1930

ROLLISTON, Sir Thomas Browne, M.D.; SUDHOFF, Sketches; CRUMMER, An Original Drawing of the Tilt Page of Vesalius' Fabrica; CHANCE, On Hippocampus and the Apophyses; MARSH, The History of Taking the Blood Pressure; FRANCHINI, Lazzaro Spallanzani; HALL, General and Medical Science One Hundred Years Ago; BARNES, Oculi—Portrait Topologist; SCARLETT, Jean Paul Marie, The Physician as Revolutionist; WHEEL, Semaines; FLEISCHWILL, Ninian Pickney, M.D., Part II; LEAKE, Roman Architectural Hygiene; COOPER, The Medical School of Montpellier in the 14th Century; HANCOCK, The Irish School of Medicine; JACOBSON, John Cockley Latham and His Relations with Jonathan Cramer, Ephraim; CALHOUN, Jr., Hershbach Astrological Medicine; MILLER, Children of Apollo; BRAGMAN, The Medical Wisdom of Nathaniel Hawthorne; ROLLISTON, Medical Friendships, Clubs and Societies; WILSON, Alphonse; Francis Maria Goring; HUNTER, Medicine in China, Old and New; HOWELL, Doctor George Rogers and His Times; BURTON, Corvian, His Life and Works; SHRYOCK, Public Relations of the Medical Profession in Great Britain and the United States, 1600-1800; Incompleta in New York Academy of Medicine; Medical Incompleta in the Library of Washington University School of Medicine; Medical Incompleta in the Medical Library of the University of Rochester; WARDEN, The Physicians of the Dance of Death, Parts I-III; HARR, Stephen Grand and the Great Epidemic of Yellow Fever in 1793; DUNN, A History of Substances Known as Aphrodisiacs; MILLER, History of Syphilis; MONTGOMERY, Hermannus Franchini, The Author of a Poem Called Syphilis; HUNTER, An Historical Survey of Gonorrhea; LLOYD, Aretaeus the Cappadocian; His Contribution to Diabetes Mellitus; JONES, The Practice of Medicine Among Our Ancestors; Incompleta of the Cleveland Medical Library Association; LLOYD, Benjamin Rush and His Critics; PRACHEY, William Hunter's Obstetrical Cases; CATHFIELD, The Infant Welfare Movement in the Eighteenth Century, Parts I-II; RODRIGUEZ, The History of Censurism; TELLO & WILLIAMS, An Ancient Syphilitic Skull from Persia in Peru; FRYFIELD, John Keats, The Reactions of a Genius to

Tuberculosis and Other Advancing; MAHER, The Physician Ebert; MOORHEAD, Tuberculosis and Genius as Manifested in St. Francis of Assisi; GOLDSTEIN, The Influence of Claude Bernard on Physiological Concepts; BALLARD, Incompleta in the Boston Medical Library; SUDHOFF, Incompleta Owned by the Lane Medical Library, Stanford University; MIDDLETON, John Syng Dorsey; FREEMAN, Lewis Morgan; VON STORCK, An Essay on the History of Epilepsy; HOEYER, Significance of the Scientific Conquest of the Air; Inauguration of the Department of the History of Medicine of the Johns Hopkins University, and the Opening of the William H. Welch Medical Library; Adaptation of a Museum to the Teaching of Medical History; PACKARD, Medical Incompleta; PACKARD, An American Physician's War Book about the Revolution; KREMERBAUM, Proceedings of the Sixth Annual Meeting, American Association of the History of Medicine; LEAKE & LAKET, San Francisco Medical History Seminar; The History of Biology; STRECKER, The Story of a Hospital Unit on the Western Front; L'ARTE DE MEDICINE Spanish; Nolla Storia, e Nel Contorno Frammento del Secolo XIII & XV; The History and Traditions of the Morchfield Eye Hospital, One Hundred Years of Ophthalmic Discovery and Development; DAVIS, Deane, and Dutton, the Story of the Science of Healing from Medicine-Master Doctor; KYRIAS, Jahrbuch des Instituts für Geschichte der Medizin an der Universität Leipzig; Die Anfängen Keimzelle in Her und Odysseus; History of Blackley; The Life of Hermann M. Biggs; The Modern Dance of Death; The History of Hermannus; Human Biology and Racial Warfare; Clio Medicine, Vols. 1-3, The Beginnings; Egypt and Assyria; Medicine in the British Isles; Anatomy; Letters of Dr. Richard D. Arnold; A Treatise on the Canon of Medicine of Avicenna; The Creed of a Biologist; Biographical Lessons des Hervorragenden Ärzte Aller Zeiten und Völker; Benvenutus Geranus of Jerusalem; Great Painters and Their Works as Seen by a Doctor; Edward Jenner and the Discovery of Smallpox; Vaccination; Early Sciences in Oxford; Clio Medicine; Internal Medicine; Medical History of Michigan; Kölner Anglistische Arbeiten.

Frontispiece
Annals of Medical History
March, 1931



L. Baker.

[1722-1809]